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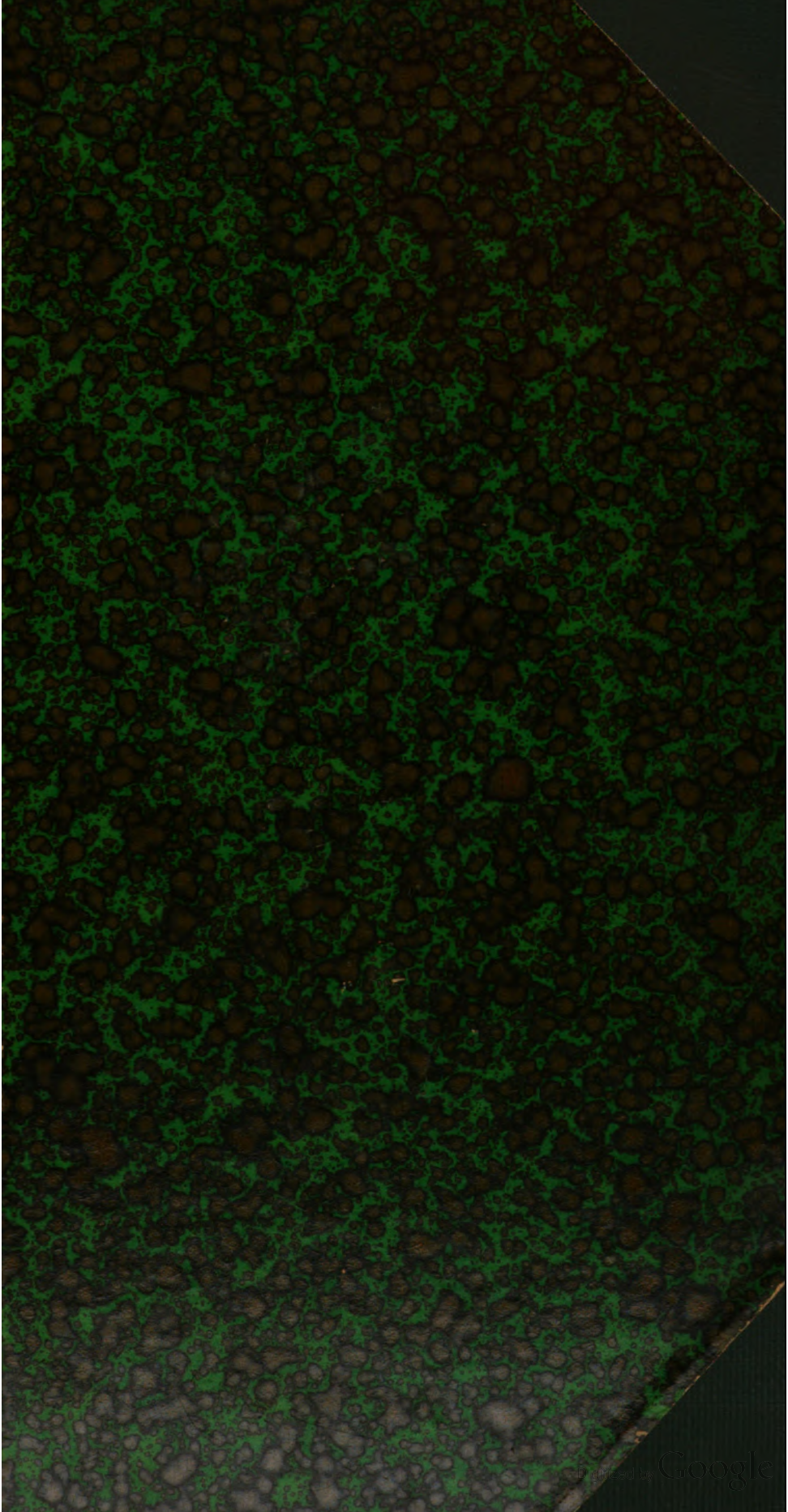
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THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES.

The Museum News

Central Museum, Eastern Parkway
Children's Museum, Bedford Park

VOLUME IV

OCTOBER 1908 TO MAY 1909

BROOKLYN, N. Y.
Printed for the Museum

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THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES.

The Museum News

Central Museum, Eastern Parkway
Children's Museum, Bedford Park

VOL. 4 BROOKLYN, N. Y., OCTOBER, 1908. No. 1

MAN-EATING SHARKS.

A recent addition to the exhibit of fishes is a cast of the Great White Shark, popularly known as the Man-eater. As the label states, both the white and blue shark occasionally attack man, not because they are particularly fond of him, but because they eat almost anything that comes in their way; all is fish that comes to their nets. They have no keen powers of discrimination and no objection to man. Fortunately, these two species are rare on our coast and by no means common anywhere, and no one in this vicinity need hesitate to go in bathing for fear of being eaten by a shark. Authentic cases of shark bite are, in fact, few in number, and the man-eating sharks reported in the papers almost invariably harmless species.

A query propounded in the columns of *Forest and Stream,* however, called forth a letter from Mr. Albert Delmar of Honolulu, who had seen or known of several instances of death or serious injury from the bites of sharks. In one instance several natives started to swim for a boat that had gone adrift from a schooner and the last man was seized and drawn under by a shark which had been attracted by the splashing and apparently decided that the unfamiliar fish were slow and harmless.*

In another instance, cited from a journal published at Port Elizabeth, South Africa, a man went bathing in the vicinity of a wharf from which fish offal was dumped, and a shark took off his leg. This is not surprising; sharks were accustomed to resort to this spot to feed, and it was associated in what takes the place of "mind" in sharks with something to eat. On the other hand, the writer has known men to bathe day after day in waters where 12-foot sharks occurred, and Mr. Delmar notes that the natives of the Sandwich Islands practiced surf bathing right along and that days might pass even in these waters where sharks abound

* For full details readers are referred to *Forest and Stream* for Sept. 29, 1906.

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without one being seen. Then, too, while sharks of the "man-eating" species are rare, large examples of these dangerous creatures are still rarer. and although the White Shark reaches a length of 30 to 35 feet, and a weight of two tons or more, one of this size would be a giant. Such a shark has a jaw about three feet across, garnished with saw-edged teeth two inches long, and would have little difficulty in cutting a man in two at a bite.

Large and formidable as a shark like this would be, he is insignificant in comparison with some of the sharks of long ago, that flourished when our Southern States lay beneath the sea, and about their shores swam strange whale-like animals, called Zeuglodons, that, did they live now-a-days, might pass themselves off for sea serpents. In company with these were sharks of a size only dreamed of now, and it has been suggested that these large sharks ate up the Zeuglodons and then starved to death for want of food. These sharks are known only by their teeth, which are triangular, serrated, flattened outside, and six inches long and correspondingly broad and thick. Applying the rule of three to the teeth of the White Shark, the owners of these huge teeth, appropriately named *megalodon*, giant-toothed, must have been from 60 to 90 feet in length, with a six-foot gape of mouth, and to one of these monsters a man would have been a mere mouthful.

THE ANNUAL REPORT.

The Report of the Museum for 1907 was issued during the month of August; it contains, besides the reports of the work accomplished by the various departments of the Museum, a summary of the history of the Museum, the principal laws relating to its establishment, and some interesting reminiscences, by Dr. Theo. Gill, of the early days of the Institute when the collections were housed in the Washington Street Building.

IMPORTANT CHANGES IN THE COLLECTIONS.

The past season has been a very busy one and, in many respects, most satisfactory, as much has been accomplished in moving cases and objects and preparing for the systematic arrangement of material in a manner not before possible. This is especially true of the Natural History collections, which more than any other need to be arranged systematically, but have been unavoidably in great disorder. The changes made this summer make an orderly arrangement for the first time possible, and although many new cases are needed to do this properly, yet it is hoped that the next six months will see much done in this direction.

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The porcelains and other ceramics, and all cases, have been moved from the West square gallery, first floor, and will now be found in the East square gallery. The West gallery will be devoted to the fine collections made among the California Indians during the past two years; a portion of the cases needed for this purpose has been constructed, and the work of arrangement will proceed at once. Two large cases have been removed from the West gallery, second floor, and this hall is now devoted to animals found on Long Island. The removal of the cases permits the lowering of the electric-light fixtures, so that this hall will be much better lighted than heretofore.

The relief map of Long Island has been colored to illustrate the geology of the Island, and is now an instructive as well as a very handsome map. The geological formations are plainly shown and the two great moraines, marking the end of the great ice sheet that spread over eastern North America, may be readily distinguished.

In the adjoining hall a case has been added containing the marine shells of Long Island, accompanied by very full labels; the land shells will be put on exhibition later. Foreign birds still linger in this hall, but as soon as it is possible to move the minerals to new quarters, these birds too will be moved and put in their proper places, while this hall will be devoted to mammals and other animals of Long Island. As a part of the general plan the fishes have been placed in the West long gallery, on the left of the entrance, where they mark the beginning of the exhibit of vertebrates. When this hall is properly arranged it is hoped that it will give the visitor a fairly complete outline of the large and interesting group of back-boned animals, from the lancelet to man.

Incidentally the Indian Pottery has been removed from the Central Section and the shell collection transferred to the long East gallery, where it finds its proper place with the other invertebrates; all of which is just so much towards the systematic arrangement of the collections. The arrangement of the invertebrates is practically at a standstill until the completion of cases for the sponges and corals, but in order that the great group of Echinodermata may not be entirely unrepresented, a small series of starfishes and sea-urchins has been placed on exhibition.

A portion of the valuable Egyptian collections acquired by the Museum has been displayed in the long East gallery, first floor, part of it provisionally installed in mahogany table cases, but a large part of this material, including a very beautiful sarcophagus, is awaiting cases.

A number of relief maps have been hung in the corridor leading to the Library, where they may be readily seen and studied, while books relating to the regions illustrated will be found in the Library.

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The group showing the home of the Guacharo bird has become an accomplished fact and is installed on the west side of the Central Section, on the Natural History floor. Here, as the label states, a window looks into a long, low cave in the mountains of Aripo, Trinidad, peopled by many hundred birds whose nests are plastered against the side of the cave. In the nests are the young in various stages of growth, while two unlucky youngsters have fallen to the rocks below, where they are endeavoring to attract the attention of their parents. The old birds are flying about the cave, sitting on their nests, or perched upon the rocks and ledges. The rainy season is on, the nests are soaked, and water drips from the roof of the cave and trickles down the long stalactites. This group was designed by Mr. Cherrie and executed under his immediate supervision. The birds were obtained by him on his last visit in 1907, a full account of which will be found in the News for October, 1907. Acting on a suggestion of Mr. W. A. Bryan, a switch has been so arranged that the cave remains in darkness until the visitor presses a button and turns on the light. The label says that the cave resounds with the flapping of wings, the calls of the old birds and the answering cries of the hungry young, but this is a bit of poetic license, although had Mr. Cherrie been equipped with the proper apparatus it might have been a reality.

Another important piece placed on exhibition during the summer is a group of Steller's Sea Lions, presented by Col. R. B. Woodward. This comprises five individuals, a big and burly bull, an old female, a yearling and two pups, one of them perched on its mother's back. This is *not* a bit of poetic license, but an incident that is likely to occur at any time, for the little sea lions climb about on anything that comes handy and when in the water one will occasionally stand on the back of its mother and take a ride. The number of these sea lions is steadily lessening through continued persecution partly by fishermen and partly, we are sorry to say, "for the fun of it." The damage done to the fisheries by these large sea lions is infinitesimal, as these animals live mainly on squid, with occasional crabs and such worthless fishes as sculpins, and it has been shown that the waters right about the rookeries abound in fish. The black, or California Sea Lion, is to some extent injurious, but not sufficiently so to warrant killing off this species. Over-fishing, wasteful methods, destruction of spawning grounds and spawning fishes by sewage, lumbering, mining, and manufacturers are the true reasons for the great decrease in food fishes that is everywhere taking place, although no fisherman was ever known to admit that he was in any way responsible for it. The fish have "gone away," but they have usually gone so far that they never return.

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Another new piece is the great Polar Bear, received from the Zoological Park last winter, which makes an important addition to the collections. This is placed near the group of black bears and recalls the statement of the old naturalist: "There be one kind of bear. In the north he is large and white and in the south small and black." Apparently the older naturalists were happily free from vexatious questions as to the validity of species and sub-species.

THE BOTANICAL COLLECTIONS.

Generally speaking, the botanical collections of the Museum are at present an herbarium of several thousand mounted sheets, classified, in the main, according to Engler and Prantl's "Die Natürlichen Pflanzenfamilien." Besides this herbarium, there is gradually accumulating a series of material *en masse*—plants preserved either dry or in fluid for correlative study with the mounted sheets. Practically all of this mass material is of recent collection and from local habitats.

The herbarium consists, in large part, of the collections accumulated by several Brooklyn men and women whose interest in the local flora had been active and energetic. Among these may be recognized the collections of George B. Brainerd, Stephen Calverly, William Calverly, Mrs. John J. Creevey, Abel J. Grout, Charles H. Hall, George D. Hulst, William H. Leggett, John M'Callum, E. S. Miller of Wading River, Mrs. Annie Morrill Smith and Miss Maria O. Steele.

The latest gift is a set of more than 100 specimens of the trees of Long Island collected and given by Miss Motts. Many of them are records of the forest locations no longer existing.

A recent acquisition is the large herbarium of E. S. Miller, whose name is given above. This collection is one of the most valuable to the general student because it contains numerous species from the collections of the older botanists of a generation or two ago. Many of the specimens represent co-types; and other specimens are, in many cases, from the type localities. This collection is stored at present, awaiting the disposal of material of prior date and the construction of new cases.

Especially fortunate is the possession of the two volumes of Dr. Asa Gray's* Grasses and Sedges, labelled, and bound with title page, introduction and index—hence "published"—and distributed in 1834 and 1835. Cross references to these specimens will be found from the proper sequence of their species in the herbarium.

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*A. Gray: N. Am. Gramineæ and Cyperaceæ, Parts I & II, New York, 1834-1835.

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It is of interest that several editions of Floras of Long Island have been based on the various collections now installed in our Museum. It commonly has been considered that an herbarium is largely made up from the common flowering plants. In contrast with this, it is gratifying that many of the Long Island botanists have collected other groups of plants; particular reference should be made to those interested in sea weeds, mosses, ferns, and somewhat in fungi.

The weakest point in the herbarium is the representation of fungi. Material, both dry and fluid, of common species, even, is scant.

The plant material is being catalogued and, in certain groups, an active revision is under way to bring the species relationships to the best modern understanding.

Botanical collections is a term covering more than material at present available; but it is the intention that the Museum shall be able to answer any reasonable question about plants, and it is the hope that the citizens of Brooklyn, and other visitors, will take advantage of the opportunities as they are improved or newly established.

LIZARDS.

Visitors to the Museum have noticed on the labels references to books in the Library treating of the specimens exhibited; and sometimes have taken advantage of these references. A few specially interested have asked if other material was available. In the Museum there are numerous lines of study material available to the student.

Regarding the reptiles, there are a few references as suggested above; and in addition there is now available a study series of lizards. These have been separated according to species. Each species has been recorded, the record including locality, collector, donor, etc.

The principal groups of lizards represented are the Iguanas, and their relatives, of which we have 22 species, the common forms; of which one is our little Green Lizard of the Southeastern United States, and the so-called "Scorpions" and the larger and more conspicuous forms which the visitor probably has seen living at the New York Zoological Park, and the so-called "Horned Toads," of which we have excellent material of five species. The Snake Lizards, the legless species of which are so hard to distinguish from true snakes, unless one examines closely the arrangement and character of the scales of the head. The Gila Monster. The Monitor from the Congo country of Africa. The Running Lizards, represented by three species from our Western States, and in the East by the common Blue-tailed Lizard. The Blue Lizards and Green Lizards of the thickly inhabitated parts of Europe. The true Skinks, represented by one species from Egypt and the eastern part of the Sahara.

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LIBRARY NOTES.

Mention is made on another page of the Museum's Herbarium. The Library contains a carefully selected collection of botanical books, many of which are not to be found in other Brooklyn libraries. A printed author card index to all botanical literature in America since 1894 is in the botany alcove convenient for reference. Among recent purchases are Adanson's "Famille des Plants." Barton's "Flora Philadelphicæ," Bauhin's "Pinax Theatri Botanici," Pritzel's "Iconum Botanicarum Index Locupletissimus," and also his "Thesaurus Literaturæ Botanicæ Omnium Gentium ad Nostra Usque Tempora," Vahl's "Enumeratio Plantarum," and Warming's "Systematic Botany," latest edition.

Apropos of the article in another column on the Museum's collection of Lizards, the Library contains numerous works on the subject, among which is Edward Drinker Cope's "The Crocodilians, Lizards and Snakes of North America," published in 1900, invaluable for reference to students interested in the Lizards of this country. Its scope is to give an account of the physical characteristics of these reptiles. On the shelves will also be found many papers by G. A. Boulenger, and part of the set of the British Museum Catalogue of Lizards.

The Library is receiving from week to week an unusual number of books on the Fine Arts, due to a bequest from the late Mr. Charles B. Duryea. A list of these will be given in a later issue of the News.

The three volumes of Oskar Munsterberg's "Japanische Kunstgeschichte" were purchased a short time since and were put into use before there was time to catalogue them, to assist a patron in working up a scheme for the interior decoration of a room for a special purpose, the color illustrations being invaluable for his use.

A book on "Heredity" by J. Arthur Thompson, recently issued, is creating more than ordinary interest. A copy will be found on the Library's shelves.

The Museum has just published and distributed Science Bulletin, vol. 1, No. 14, "A New Great Horned Owl from Venezuela, with Notes on the Names of the American Forms"; by Harry C. Oberholser. It is the shortest Bulletin of the volume, being only four pages, and is for sale at the Museum for five cents.

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The "Measuring worm," a shade tree pest which has not been seen in the city for fifty years until last summer, aroused much interest among the entomologists and arboriculturists, who made good use of the Library's literature on the subject.

A proof that at least some members of the public read the "Museum News" to advantage is evidenced by the fact that a visitor brought with him to the Library, not long since, a copy of the little bibliography on "Insects as Carriers of Disease," published in a recent number, and called for several books on the list.

It is always interesting to discover what mental process leads to a call for a book, and in a scientific library a layman's choice is often traceable to a book review, as was the case the other day when Jenning's "Action of Lower Organisms" (Carnegie Institution publication), was desired as the result of a review in Science.

During the late spring several practical talks on the care of the trees in the city streets were given in the lecture room and books on the subject were displayed on a table in the Library for the special use of those attending the lectures.

The Library often has occasion to refer people from the book to the Museum specimen, proving that it is a poor rule which does not work both ways.

Miss Grace Bush, a graduate of the Pratt Institute Library School, class of 1908, substituted for a few weeks in the cataloguing room during the summer.

During the summer about 30 volumes were sent to the Cold Spring Harbor Biological Laboratory of the Institute for the use of the summer school.

A revised list of Museum publications has been printed and may be had upon application.

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The Children's Museum.

Bedford Park.

LOAN MATERIAL FOR SCHOOLS.

We give below a somewhat detailed list of illustrative materials for class-room use which we would be glad to lend to teachers who need them. We shall take pleasure in showing loan specimens to those interested, and hope that a knowledge of what we have may lead to its more general use.

Objects may be kept one month.

CHARTS.

About 500 large colored charts illustrating the following subjects:

ANATOMY OF ANIMALS.

Mammals—Bat, cat, horse, rabbit, etc.
Birds—Hen.
Fish.
Frog.
Insects—Honey bee.

FLESH-EATING MAMMALS.

Bear, lynx, weasel, wolf, hyena, lion, tiger, ermine, etc.

FLYING MAMMALS.

Bat, flying squirrel.

GNAWING MAMMALS.

Beaver, hare, guinea-pig, porcupine, squirrel, hedgehog, etc.

HOOFED MAMMALS.

Antelope, chamois, buffalo, camel, cow, deer, elephant, goat, horse, llama, sheep, reindeer, etc.

WATER MAMMALS.

Hippopotamus, seal, walrus, whale, etc.

MISCELLANEOUS MAMMALS.

Armadillo, sloth, kangaroo, etc.

BIRDS.

Albatross, condor, eagle, owl, flamingo, hummingbird, ostrich, peacock, pelican, penguin, skylark, starling, turkey, vulture, etc.

PICTURES.

CRUSTACEA.

Lobsters and crabs, crayfish, etc.

FISHES.

Perch, carp, pike, dogfish, eel, trout, salmon, sturgeon, shark.

AMPHIBIA.

Frogs.

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REPTILES.

Snakes (boa constrictor, viper, ring snake), lizards, tortoise, crocodile.

BOTANICAL OBJECTS.

Series illustrating elementary botany, showing the embryo, seed, root, stem, leaf, flower, stamens, pistil and fruit.

Series illustrating structure of flowering plants; 50 charts.

COMMERCIAL PLANTS.

Almond, beet, coffee, cotton, flax, hemp, hop, pepper, potato, rice, sugarcane, tea, tobacco, wheat, oats, barley, etc.

FRUIT TREES.

Apple, cherry, pear, plum, etc.

OTHER TREES.

Ash, beech, birch, chestnut, cocoanut, palm, elm, hazel nut, horse chestnut, oak, olive, pine, spruce, rubber, sycamore, walnut, willow.

CHARTS CONTAINING SPECIMENS OF THE FOLLOWING WOODS:

Birch, walnut, alder, apple, pear, cherry, ash, elm, locust, maple, linden, horse chestnut, pine, larch, fir, oak.

MOUNTED BIRDS.

Each specimen is carefully mounted in a strong pasteboard box of light weight and convenient size for handling.

PERCHING BIRDS.

Wood Pewee
American Crow
Starling
Baltimore Oriole (male and female)
Meadow Lark
Purple Grackle
Red-winged Blackbird
American Goldfinch
Chewink
Indigo Bird
Purple Finch
English Sparrow
Fox Sparrow
Song Sparrow
White-throated Sparrow
Scarlet Tanager
Cliff Swallow
Cedar Waxwing

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Red-eyed Vireo
Black and White Warbler
Black-throated Blue Warbler
Black-throated Green Warbler
Magnolia Warbler
Maryland Yellow-throat
Oven Bird
Parula Warbler
Pine Warbler
American Redstart
Yellow-breasted Chat
Yellow Warbler
Catbird
Brown Creeper
Chickadee
American Robin
Bluebird
Brown Thrasher
Wood Thrush

SWIMMING BIRDS.

Bonaparte's Gull
Sea Dove
Sea Gull.

SHORE BIRDS.

American Woodcock
Spotted Sandpiper
Black-billed Plover.

GALLINACEOUS BIRDS.

Bob-White.

BIRDS OF PREY.

Sparrow Hawk.

CUCKOOS, WOODPECKERS, ETC.

Black-billed Cuckoo
Yellow-billed Cuckoo
Flicker
Pileated Woodpecker
Red-billed Woodpecker
Yellow-bellied Woodpecker
Hummingbirds

NESTS.

Hummingbird
Oriole.

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NOTES.

We are glad to welcome our young friends to the Museum again after their long holiday, and it has pleased us to see that many of our regular visitors have found their way to the Museum on the day of their arrival in town. Despite the absence of so many children, we have had a steadily increasing number of visitors. The usual repairs and improvements (which necessarily have to be left until summer, when our building is least used) have progressed only with great difficulty. The building has not been closed to the public, but we regret that the closing of certain rooms has been unavoidable. In every case when rooms have been entirely shut off vacation classes with teachers have arrived with very definite plans for studying exhibits. In several instances the disappointment at the condition of affairs was so great that we were obliged to open the freshly painted rooms and allow children to enter in small groups of four or five. There seems to be no time when any part of the Museum can be closed without disappointment to some one.

A number of curators, librarians and teachers have found their way to the Museum from California, Texas, Canada, and elsewhere, while the members of our own staff covered a wide range of territory in their vacation rambles. Miss Lee spent the month of July in Virginia, Miss Draper travelled for eight weeks in England and continental Europe, Miss Gallup went to Nova Scotia and New Brunswick, and Mr. Engelhardt is in Central America as we go to press.

The smallest hummingbird has been mounted by the side of the condor, practically the largest bird that flies. The hummingbird is so small that the condor could easily take its whole body in the mouth without injury to the hummingbird.

We have two mud puppies in the large fish tank. These animals are full grown and have attracted a great deal of attention, but they are so slightly known among the majority of our children that a word about the animal may be of interest. The mud puppy, *Necturus maculatus,* called also the water dog, is closely related to frogs, toads and salamanders. It lives in streams of New York and Ohio and is especially abundant in the region of the Great Lakes and the upper Mississippi Valley.

The large and bushy red tufts on the head are gills with which the animal breathes while under the water, although it also has lungs for breathing the air.

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A system of intercommunicating house telephones has been a much felt want in our Museum work, but the estimates of contractors have been prohibitive. This summer two of the boys, James Parker and Robert Stevenson, most kindly installed a complete system by which we can communicate with all the offices and laboratory. Much praise is due the boys, as the system of interior wiring had to be especially devised to meet our peculiar needs.

We take this occasion to thank Parker and Stevenson for their kindness to the Museum and to congratulate them upon the success of their original and ingenious system.

Mr. F. S. Ackerman has given us a young boa constrictor alive. It was found in a bunch of bananas, shipped from Costa Rica. This is the fourth animal that has been accidentally brought to us. "Billy Green Springer," our Carolina green tree frog, was shovelled out of the hold of a coal vessel in a shovelful of coal. A South American tarantula arrived in a shipment of dye-woods, and a small lizard, the reef gecko, came in a bunch of bananas.

We are keeping a careful record of animals accidentally introduced from foreign countries, and will be very glad of any other animals that may come to the notice of our readers.

Through the kindness of Mr. Frank M. Woodruff, of the Chicago Academy of Sciences, we have secured a fine lot of colored lantern slides of animals. These slides are made from negatives taken by Mr. Woodruff and colored from the living animals. Our children this winter will have the pleasure of seeing animal pictures far more true to life than any we have hitherto been able to get.

A series of specimens showing various types of birds' bills and birds' feet has been added to our bird collection.

The City History Club disbanded for the summer early in June. At the last meeting the members welcomed their parents and visitors from another club as their guests. When the club meets again this autumn we shall offer them the use of a separate room in the basement which has been fitted for the purpose.

Our lectures will be given in accordance with the schedule, and teachers are invited to send and bring their pupils.

Teachers wishing to bring classes for special talks on subjects directly related to class work are invited to communicate with Miss Lee or Miss Gallup, who will arrange hours and subjects according to request.

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It has heretofore been customary to remove the wireless telegraph the first of June, but this year there was such a demand for the use of the apparatus and tools, that we allowed the boys to continue using the instruments until July.

Last year we reported, through the News, that several boys obtained positions for the summer with one of the commercial companies. This was sufficient to inspire a number of other boys, and much of their time during the winter was spent at the Museum learning to telegraph and make instruments.

After the first of June, four boys came to the Museum every morning at nine o'clock and remained until closing time. One of the boys came expressly to practice receiving messages in order to read the code with sufficient ease to accept a position; the others spent most of their time making and testing new kinds of instruments. Some of the boys have made apparatus with which they can receive messages from points over 1,000 miles away. During their vacation, these boys were again able to obtain positions which paid well and also gave them an opportunity for travel.

Including the boys who came regularly during the month of June, there were 179 visits recorded of boys who went to Miss Lee's office for some definite purpose. As the lectures were over for the season, part of the lecture room was turned into a workshop, since it was impossible to accommodate all the visitors in the small office. The lathe was particularly helpful to many of the boys and was in constant use.

As soon as Miss Lee returned from her vacation, the boys began coming again for wireless information, so it was decided to put the apparatus in working order as soon as necessary improvements could be made. A new antenna consisting of three strands of hard drawn copper wire, each 700 feet in length, was installed. New tuning coils, adjustable condensers, and a helix were made, and a different system of wiring adopted. Better work can now be done than ever before, and conversations can be heard between operators in Washington and Norfolk as easily as in this vicinity. The boys, however, are never satisfied and are continually trying new experiments, hoping to discover some better system.

From the number of boys who have recently become interested in wireless telegraphy for the first time, we are anticipating a large attendance this fall. The problem is how they can be accommodated in one small room, which has also to be used as an office.

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LIBRARY NOTES.

The May, 1908, number of the "Museum News" mentioned that the Library was then preparing to print a selected list of books upon "Nature Study," stating further that "copies of the list will be sent free to any librarian or teacher, upon application to the Children's Museum Library." The list was attractively printed by the Museum Press and ready for distribution promptly on the proposed date, May 15th. By request, copies of the list were sent to one or two library periodicals, and at the suggestion of a librarian in this city, a brief notice of the list was sent to some of the educational journals.

At the present writing, about 200 copies of the list have been distributed, leaving a small number still available. A good proportion have been sent to teachers and librarians in Greater New York, and during the summer, teachers and pupils in the vacation schools have found the books of definite help to them. On referring to our mailing list, we find that the lists have gone to various parts of this country, including the Public Library, Portland, Ore.; State Normal School, S. D.; North Dakota University; the University of Texas; Pennsylvania State Library; Charleston, S. C., Museum; and Public Library, Jackson, Mich.; also to a few foreign cities, such as Edinburgh, Manchester, and Rotterdam.

As an aid to the enjoyment of the summer vacation in the country or by the seashore, the President of a Mothers' Club in this neighborhood gave an address to the Club upon helpful books for the study of birds, insects, flowers, and shells. The books were all selected from this Library, and included several for parents' use and others which would be attractive to children.

A recent number of the periodical "The Guide to Nature" prints a Letter to the Editor under the heading "LIBRARY OF NATURE STUDY," calling attention to the Children's Museum Library and to its recent list of books upon School Gardening and other Nature topics.

During the coming year, the Library will endeavor to keep in touch with the best recent literature upon various educational topics, adding new books and receiving regularly numerous periodicals. The members of the Library Staff have now returned from their vacations and are again ready to be of service to teachers and pupils in public and private schools. Miss Draper spent a two months' vacation in a most enjoyable trip to Europe, visiting incidentally several museums and libraries in the British Isles and on the Continent, and Miss Baigrie had a quiet and restful vacation among the mountains of New Jersey.

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LECTURE SCHEDULE
AT THE CHILDREN'S MUSEUM.

Grades 7A and 7B: Tuesdays at 4:00 P. M.

October 6th, "The Content of Physics."
October 13th, "The Constitution of Matter."
October 20th, "Gravity."
October 27th, "Falling Bodies and the Pendulum." **Miss Lee**

Grades 5A and 5B: Wednesdays at 4:00 P. M.

"Trees."

October 7th, "How Trees Grow."
October 14th, "Fruit Trees."
October 21st, "Evergreen Trees."
October 28th, "Why We Should Protect the Trees." **Miss Lee**

Grades 8A and 8B: Thursdays at 4:00 P. M.

"Magnetism."

October 8th, "Natural and Artificial Magnets."
October 15th, "How and Why Magnets Attract and Repel."
October 22nd, "Experiments with Magnets."
October 29th, "The Earth's Magnetism." **Miss Lee**

Grades 6A and 6B: Fridays at 4:00 P. M.

"Geography of South America."

October 2nd, "Venezuela and the Orinoco."
October 9th, "Peru, Its Resources and Scenery."
October 16th, "A Glimpse of Ecuador."
October 23rd, "Bolivia."
October 30th, "Life in Chili." **Miss Lee**

Primary Grades: Saturdays at 10:30 A. M.

"Animals in the Museum."

October 3rd, "Monkeys."
October 10th, "The Kangaroo and Opossum."
October 17th, "The Ant Eater."
October 24th, "The Sloth and Armadillo."
October 31st, "The Porcupine and Hedgehog." **Miss Lee**

Primary Grades: Saturdays at 2.30 P. M.

"Insects in the Autumn."

October 3rd, "Katydids and Grasshoppers."
October 10th, "Crickets and Their Ways."
October 17th, "Bees and Their Preparations for Winter."
October 24th, "How Moths and Butterflies Live Through the Cold Weather."
October 31st, "Ants and Wasps." **Miss Gallup**

THE LECTURES ARE FREE TO THE PUBLIC.

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THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES.

The Museum News

Central Museum, Eastern Parkway
Children's Museum, Bedford Park

VOL. 4 BROOKLYN, N. Y., NOVEMBER, 1908. NO. 2

THE DURYEA LIBRARY OF ART AND ARCHITECTURE.

By an arrangement consummated between the Trustees of the Art Association of Brooklyn and the Trustees of this Museum, a bequest to the former institution for the purchase of books on art and architecture is to inure to the benefit of both institutions. The maker of this bequest was Mr. Charles B. Duryea, a citizen of Brooklyn. The sum ultimately available from this bequest for the purchase of such books will not be less than $6,000. A sum of about $1,600 is now being spent and the works so far obtained may be inspected in the Library of the Museum, where they will be kept, properly distinguished by a special book-plate and catalogue, subject to the further action of the Trustees of the Duryea Fund.

The aim of the Trustees of the Fund will be to establish an art library in Brooklyn which may, as far as the funds available allow, offer to some extent the special advantages which New Yorkers have so far enjoyed in the Astor Library of New York, in the Avery branch of the Columbia University Library, and in the Art Library of the Metropolitan Museum. The already important possessions of the Museum's own Art Library naturally will not be duplicated. By this combination of forces, and of acquisitions, Brooklyn may hope to possess an Art Library of solid value and of systematic and comprehensive choice. Some notice has been already made in the Library Notes of the MUSEUM NEWS of the receipt of books purchased under the Duryea Bequest and more complete lists will be duly made known. Meantime, a casual glance at the Atlas of Prisse d'Avennes, "Histoire de l'Art Égyptien," of Prisse d'Avennes, "l'Art Arabe," or of Nicolini's "Pompeii" will give a thrill of pleasure to every lover of good books and of sumptuous illustration. The Trustees of the Duryea Bequest have approved of the following classification of topics and subject matter as a guide to the choice of purchases, subject to such wide limitations as are naturally involved in the present acquisitions of

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the Museum Art Library. The comprehensive character and logical order of arrangement in these bibliographical headings will speak for themselves, but their greatest value lies in the fact that they represent either an actual choice of new books or an actual list of extant acquisitions. The headings are taken from an actually now extant card catalogue of books, as planned for an outlay within the limits of the Duryea Bequest, but also comprehending the present possessions of the Museum Library.

WORKS FOR POPULAR REFERENCE.

BIBLIOGRAPHIES:

ENCYCLOPÆDIAS AND DICTIONARIES OF ART AND ARCHITECTURE:

MUSEUM HANDBOOKS.

SETS OF HANDBOOKS:

Bibliothèque de l'Enseignement des Beaux-Arts; Artists' biographies in series; Popular Art Histories; Miscellaneous popular summaries of Industrial and Decorative Art. Handbooks of Travel for Art Students. General Works of Travel for Art Students.

GUIDES AND HANDBOOKS OF TRAVEL.

GENERAL HISTORIES OF ART.

General Histories of Architecture; General Histories of Sculpture; General Histories of Painting; Industrial Art, General Histories; Ornament, General Histories.

FINE ARTS: ANTIQUITY.

GENERAL HISTORIES OF ANCIENT ART.

EGYPT.

Popular introductory works to Egyptology; Cairo Museum; Official publications on excavations by authorities of the Cairo Museum; Folio plate publications in order of appearance; Egyptian Exploration Fund; Egyptian Research Account; Prehistoric and early Dynasties; Recent Excavations; Architecture; Archæology; Manners and Customs; Pottery; Textiles; Ornament; Scarabs; Religion; Mythology; Papyri; Hieroglyphs; Records and Inscriptions; Coptic period; Arabic period; Modern period; Political and Social History.

ASSYRO-CHALDÆA.

Chaldæa; Assyria; Persia; Hittite Mesopotamia; Asia Minor.

SYRIA AND PHŒNICIA.

ÆGEAN AND EARLY MEDITERRANEAN ART.

Cyprus; Crete; Mycenæ.

GREECE.

Topography and Travel; Monumental plate publications; Architecture; Ornament; General Art Histories; Sculpture; Terracottas;

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Pottery; Coins and Gems; Antiquities and Archæology; Æsthetics and Criticism; History, political and social.

ITALY AND ROME.

Prehistoric and Bronze Age; Etruria; Rome (the city); Pompeii; The Empire; Architecture; Art and Archæology; Coins and Gems; Glass; History, political and social.

MEDIAEVAL PERIOD.

MEDIÆVAL HISTORY, CULTURE AND CIVILIZATION.

PREHISTORIC AND BRONZE AGE.

General works, as introduction to Mediæval Art.

PREHISTORIC AND BRONZE AGE IN NORTHERN EUROPE.

Including early Roman influence in Northern Europe, and including early Christian influence in Britain.

Spain; Germany; Gaul; Scandinavia; Russia.

BYZANTINE AND SARACENIC ART.

Byzantine art, general histories; Saracenic art, general histories.

Persia; Syria; Asia Minor; Constantinople; Cairo and Mohammedan North Africa; Mohammedan Spain.

EARLY CHRISTIAN AND MEDIÆVAL ROME.

Mediæval ivories; Mediæval miniatures.

MEDIÆVAL ARCHITECTURE.

Plate publications, general; Books, general; Italy, Plate publications; Italy, books; Germany and France, Plate publications; Germany and France, books; Great Britain, Plate publications; Great Britain, books; Spain; Scandinavia; Russia.

MEDIÆVAL ART.

Iconography; Sculpture; Industrial and Decorative Art; Mosaics; Painting.

GENERAL HISTORIES OF ART, including Renaissance and Modern Art.

THE RENAISSANCE AND MODERN PERIOD.

RENAISSANCE CULTURE HISTORY AND BIOGRAPHY.

GENERAL RENAISSANCE ART HISTORIES.

Including the Mediæval period.

RENAISSANCE ART, GENERAL WORKS.

Excluding the Mediæval period.

RENAISSANCE ARCHITECTURE. PLATE PUBLICATIONS.

Renaissance architecture, books, exclusive of plate publications:

Italy; Spain; France; Germany; Great Britain.

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RENAISSANCE SCULPTURE.
Related Biographies.
ITALIAN PAINTING,
General works; Special and critical works; Biographies of artists.
SPANISH PAINTING,
General works; Biographies.

GERMAN, FLEMISH AND DUTCH PAINTING.
General works; Special and critical works; Biographies; Etching and Engraving.

ENGLISH PAINTING. HISTORIC AND MODERN.
General works; Special Biographies.
AMERICAN PAINTING. HISTORIC AND MODERN.
FRENCH PAINTING. HISTORIC AND MODERN.
General works; Special Biographies.
MODERN PAINTING.
MODERN ETCHING AND ENGRAVING.
MODERN ARCHITECTURE.
MODERN SCULPTURE.

MODERN INDUSTRIAL AND DECORATIVE ART.

Critical and educational: Special histories; Furniture; Metals; Plate; Ceramics; Textiles; Lace; Costume; Ornament.

CRITICISM AND PHILOSOPHY OF ART.

Historic Art: Architecture; Sculpture; Painting; Ornament; Æsthetics; Miscellanies.

TECHNICAL INSTRUCTION.

COINS.

ANCIENT; EUROPEAN; ORIENTAL.

ORIENTAL ART AND ARCHITECTURE.

PERSIA. CENTRAL ASIA. INDIA.
CHINA AND JAPAN. Collective.
CHINA. Ceramics. JAPAN. Ceramics and Cloisonné.

PRIMITIVE AND SAVAGE DECORATIVE ART.

PERIODICALS.

AMERICAN ARCHITECTURE AND FINE ARTS; AMERICAN ARCHÆOLOGY.
FOREIGN ARCHITECTURE AND FINE ARTS; FOREIGN ARCHÆOLOGY.

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ART DEPARTMENT ACCESSIONS.

Four paintings have been recently hung in the galleries, as follows:

Presented by Mr. George A. Hearn. Winter landscape, canvas 27 x 32 in., by Alex. T. Van Laer. Mr. Van Laer was born at Auburn, N. Y., in 1857, studied in New York in the Academy of Design and under Swain Gifford; in Holland was a pupil of George Poggenbeck. At the Charleston Exhibition of 1902 a bronze medal was awarded to him. In 1904 he served on the International Jury of Awards and has been an Associate of the National Academy since 1901. Mr. Van Laer is a member of the American Water-Color Society and of the Salmagundi Club. His studio is in New York. He is active as a writer and lecturer on the history of art and holds the professorship of History of Painting in the art school of the National Academy of Design.

Presented by Mr. George A. Hearn. Winter landscape, 40 x 30 in., by Cullen Yates. Mr. Yates was born at Bryan, Ohio, in 1866. He was a pupil of the National Academy of Design and of Chase in New York; in Paris he worked in the Ecole des Beaux-Arts and the Julian Academy, with Jean-Paul Laurens and Benjamin Constant for his masters. He won a bronze medal at St. Louis in 1904, and the Inness prize in the Salmagundi Club in 1907, and is a member of the Salmagundi Club (1899), the New York Water-Color Club (1904), and the American Water-Color Society (1905).

Presented by Mr. Francis Gottsberger, in memory of his wife, Eliza Gottsberger, and supplementing his previous memorial gifts of Old Masters, two portraits (lady and gentleman), probably of the 18th century French School, both excellent pictures and the male portrait of especial value.

STARFISHES AND THEIR RELATIVES.

The starfishes, brittle stars, sea-urchins, sea-cucumbers, sea-lilies, and other various forms, constitute a phylum known as Echinoderms. The Latin name *Echinodermata* means "spiny-skinned," a character conspicuously present on very many of these animals. Where such spiny structures are not visible one may be sure that they are found imbedded just below the surface of the skin. These hard structures are often plate-like and they constitute what, in a broad sense, may be called an external skeleton.

One of the most noticeable things about echinoderms is the arrangement of their body regious, and even their internal organs, on a radial plan, something like the rays of a star. The number of these rays in the echinoderms is usually five, or some multiple of five, with occasional variations to numbers just lower or higher. In organization the echinoderms have some of the characters of the less differentiated corals and

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jelly-fishes; and in turn the more differentiated characters of animals having a bilateral symmetry. Some members of the group even have the adult body form, though radiate, sufficiently specialized to possess what one may term a forward (anterior) end. But in all, the larval stage, following the egg, is bilaterally symmetrical.

The kinds which are common on our neighboring coasts are represented in the MUSEUM, in a recent installation, by several species of true starfish, blood stars, and "sunbursts"; by the brittle stars, including three or four species, and the sea-baskets—so called because of the repeated division of the rays into smaller and smaller interweaving branches until the smallest are reduced to mere threads. These latter threads are extremely delicate; and specimens complete and unbroken are rarely secured.

Another group, the sea-urchins, are more or less spherical or slightly depressed, with very numerous movable spines which are easily lost and again replaced; in contrast here belong the sand-dollars, flattened so much that there almost seems no room for the organs necessary to their existence.

Another group are the sea-cucumbers, strange looking leather-like animals in the larger forms; and highly colored, translucent, almost worm-like appearing animals among the smaller species which are entirely without suckers along the sides of the body.

A fourth group are the sea-lilies, or crinoids, animals which, at first appearance, suggest little relationship to the starfish and the sea-urchin. These animals, however, prove on examination to be like some brittle stars as if turned bottom up and supported on the back (aboral surface) by a long or short stem produced by the animal and used as a support above the underlying sea bottom.

In the MUSEUM will be found several species of each of these groups, except the last, in which case one or two only are shown. These species are rather common on our coast from New England to the Virginia capes. In addition there are exhibited specimens of closely related species from other parts of the sea. Economically the echinoderms amount to little or nothing, with the exception of the sea-cucumbers, quantities of which are dried and eaten by the Chinese. Adversely, the common starfishes are very destructive on oyster beds, as is suggested by a specimen showing the method by which the starfish attacks and devours an oyster.

The details of the internal structure of echinoderms may be better seen on an enlarged model of a dissected starfish than by any description in the MUSEUM NEWS.

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NOTES.

The Royal Commission of Historic Monuments of Belgium has undertaken an official examination of the "widening refinement" in mediæval cathedrals, as discovered by Mr. Wm. H. Goodyear of this Museum. This action has been made known to Mr. Goodyear by Professor L. Cloquet, Professor of Architecture in the University of Ghent, who has been requested to report to the Commission on this subject at the coming annual meeting. Professor Cloquet is also Editor of the Quarterly "Revue de l'Art Chrétien," and writes that the article on the "widening refinement" in Rheims Cathedral which Mr. Goodyear contributed to the July number of this Review has brought about the action of the Commission.

The favorable character of Professor Cloquet's prospective report may be inferred, not only from the extract below quoted from his letter, but also from his preface to the above mentioned article, in which his own independent observation of the "widening refinement" is mentioned for the church at Mouzon (Ardennes). Other independent observations of the "widening refinement" have been recently published. One relates to the ancient church of St. Mary at Dover and was made by Mr. G. A. T. Middleton, Associate Editor of the London "Building News and Engineering Journal." Another relates to the Gothic church of Saint-Pierre at Saumur (Loire) and was made by the celebrated English architect and author, Mr. Reginald Blomfield. Thus the stubborn opposition to the announced discovery, which has been made in very distinguished quarters, may be regarded as a tribute to its novelty and revolutionary significance, and as destined ultimately to be withdrawn or overpowered. In the recent Museum Report on this subject its controversial aspect was mentioned, although a discussion of the merits of the controversy was there carefully avoided.

The following extracts are from letters of the Associate Editor and of Professor Cloquet, recently received by Mr. Goodyear:

"HONORED COLLABORATOR:

By the letter, herewith enclosed, M. Cloquet sends you news which will, doubtless, please you. In consequence of your article, the Royal Commission of Monuments of Belgium has taken the initiative of making a methodical study of architectural deflections and has commissioned M. Cloquet to report on the subject. This will give him a new opportunity to show the value of your studies * * *. With assurance of high regard, believe me, yours, etc.,

EUG. COBBAERT."

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"HONORED SIR:

* * * In thanking you for your kindness allow me to acquaint you with some agreeable news. In consequence of the perusal of your article which appeared in our last number, the Royal Commission of Monuments of Belgium has selected the topic of 'Refinements' for the programme of discussion at the annual meeting of its correspondents. I have been requested to report on this subject and I shall thus have an official opportunity for insisting on the interest of your work. * * *

With assurance of high regards, believe me, yours,

L. CLOQUET."

Advance pages from the first volume of the "Cosmo Collection" have been forwarded to the MUSEUM NEWS. The work, to be completed in 10 vols., imperial octavo, is to form a comprehensive selection of the most celebrated pictures and statues known to the history of art. The subjects are photogravures of fine quality and are alternated, page for page, with descriptive, explanatory, biographical, and critical text, facing the picture. The Editorial staff includes: as Editor-in-Chief, Mr. George Hall Baker, M. A., Librarian Emeritus of Columbia University; Mr. Harry W. Watrous, N. A., Secretary National Academy of Design; Mr. Will H. Low, N. A., and Mr. Charles DeKay as Chairman of the Advisory Board.

The text comments show a practiced hand, with excellent grasp of the subject, avoiding the pitfalls of commonplace praise and of over-ready acceptance of conventional standards. The work avowedly aims at the popularization of good art by the illustration of its masterpieces. The first and real problem of such a publication lies in the preparation of a discriminating text and this problem appears to have been solved. The prospectus promises that the tenth volume will include, besides the Index to the other volumes, a complete biographical dictionary of all noted artists, with a list of the masterpieces produced by each, an alphabetical list of renowned paintings, a chronology of art and art schools, a glossary and dictionary of art terms and a bibliography of works on art.

Mr. John Lewis Childs has presented the Museum with about 300 named species of fresh-water mussels. These make a most acceptable addition to the valuable collection of shells, the more that this particular group of mollusks was not so well represented as others. The exact status of the shell collection cannot be stated, as it has grown so rapidly that it has been impossible to catalogue the specimens, but it comprises not far from 5,000 species and 50,000 specimens. And yet we need more shells.

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The Children's Museum.

Bedford Park.

LOAN MATERIAL FOR SCHOOLS.

We give below a list of specimens of insects and of charts illustrating insect life.

The specimens are mounted in strong boxes of light weight.

MOTHS AND BUTTERFLIES.

Each box contains the insect in all stages of development, from the egg to the adult, the food plant and such parasites as are very common. Each life history is fully labelled.

BUTTERFLIES.

Emperor, or Mourning Cloak
Monarch
Swallowtail (Black)
Swallowtail (Green-clouded)
Swallowtail (Tiger)
Viceroy
Cabbage.

MOTHS.

Ailanthus, or Cynthia
Cecropia
Hawk Moth
Imperial
Luna
Peacock, or Io
Polyphemus
Promethea
Silkworm
Tomato Worm (Hawk Moth)
Tussock.

STRAIGHT-WINGED INSECTS.

Cases containing life histories of the
Dragon-fly
Grasshopper
Katydid
Cricket
Cicada
Cockroach.

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SPIDERS.

Daddy Long Legs
Garden Spider
Jumping Spider
River Bank Spider
Water Spider.

TROPICAL INSECTS.

Beetles
Centipedes
Scorpions.

CHARTS ILLUSTRATING INSECT LIFE (Colored).

These colored charts show the insects greatly enlarged, with natural surroundings.

Ants—illustrating life histories and industries of the colony
Beetles—life histories
Butterflies and Moths—life histories
Honey Bee—life history
Centipede
Dragon-fly
Grasshoppers
Spiders.

MISCELLANEOUS LOANS.

MOUNTED MAMMALS.

Muskrat
Squirrel
Woodchuck
Opossum
Wildcat.

PRESSED FLOWERS IN GLASS MOUNTS.

We have about 150 specimens of Autumn and Spring Flowers, a list of which will be given in a later issue.

LIVING ANIMALS ON EXHIBITION IN THE MUSEUM.

The living animals at the Museum are housed in attractive vivaria.

MAMMALS.

Tame raccoon, two months old (see note)
Tame gray squirrel (see note)
Guinea pig
White rats.

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REPTILES.

Gila Monster (large poisonous lizard)
Blowing Viper (harmless snake)
Garden Snake (harmless)
Box Turtle
Painted Turtle
Young Alligator
"Chameleons"
Lizards from Central America.

AMPHIBIA.

Bull frogs, one pair very large specimens which have been in the Museum six years.
Pickering frogs
Common tree toads (5 specimens)
Carolina tree frog (from North Carolina) brilliantly colored in yellow and green
Wood Frog.
Mud Puppy (2 specimens), these are particularly interesting because their large external gills are very showy
Water Newts (large number of specimens kept in aquaria).

FISHES.

Living fish in aquaria:
White Perch
Pickerel
Sunfish
Gold fish (fan-tail)
Small-mouthed Bass
Yellow Perch
Ling
Cinnamon Sunfish
Brook Suckers.

INSECTS.

Observation hive of living honey bees
Chrysalids and Cocoons of butterflies and moths are kept alive throughout the year, and in proper seasons the living insects emerge.

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NOTES.

Mr. Engelhardt, after an absence of two months, returned early in October from Central America, where he visited a brother, the owner of a coffee plantation, situated on the Pacific slope of the Andes of Guatemala.

Travelling in Guatemala, Mr. Engelhardt reports, has been rendered comparatively easy by the completion, during the present year, of a railroad connecting the Atlantic port, Puerto Barrios, with the capital, Guatemala City, a distance of 195 miles, now traversed by train in two days, whereas formerly two weeks were required to cover the same distance on mule back and over the roughest kinds of roads.

The harbor of Puerto Barrios, as seen from an incoming steamer, presents a beautiful picture of palm-fringed shores, dotted here and there with thatched huts, and dense forests extending to mountain ranges, rising higher and higher in the distance. The railroad follows the valley of the Motagua River, the largest stream in the Republic, passing for 70 or 80 miles through tropical forests and extensive banana plantations, where the climate is oppressively hot and moist. Thereafter the train enters a drier and higher region, abounding in low, thorny shrubs and cacti of gigantic size, and the villages of Indians, which were few in the low country, become more numerous, frequent stops being made at small stations, where Indian women offer fruits and other eatables for sale. The first day's journey ends late in the afternoon at Zacapa, a small but interesting old Spanish town, 100 miles inland from the port. On the second day we ascended continuously through narrow valleys along steep mountain sides, over bridges and through tunnels, the temperature moderating rapidly as we approached the capital, which is beautifully situated on a broad plateau at an altitude of 5,000 feet, and surrounded by high, volcanic mountains.

Another railroad descends from Guatemala City to the Pacific Ocean, from whence a branch line penetrates the famous coffee region along the slopes of a chain of volcanoes, which extend far into Mexico. The scenery along this route surpasses even that of the Atlantic side, and it is of exceeding interest to note the fertility of the soil and great variety of vegetation. On the evening of the third day the station nearest to my destination was reached, and there remained only a ride of 25 miles on mule back, which was happily concluded on the fourth day.

In a future number of the MUSEUM NEWS, Mr. Engelhardt will tell of his experiences and observations while on a coffee plantation, but it may be of interest to relate what he says of his return journey. "Arriving again at Guatemala City, I learned that the Atlantic coast railroad was interrupted owing to heavy rains, which caused landslides and several

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bridges were washed away; furthermore, yellow fever had broken out along the line of travel. When finally a train started after ten days, we had little confidence of reaching the port in time to board a steamer scheduled to sail three days later. However, wrecking crews had been busy in clearing the tracks and building temporary bridges, so that we passed the most dangerous places without accident, but barely in time to escape another landslide which again blockaded the road behind us. We made the steamer and arrived at New Orleans without further incident."

Although Mr. Engelhardt's visit to Guatemala was not undertaken to obtain material for the Museum collections in Natural History, he, nevertheless, secured a large number of interesting specimens, including several living lizards, which have been placed in the lizard house. Our new captives represent two species, one of curious shape with a toothed crest on the back and measuring twelve inches, including the long, slender tail, while the other is six inches long, with a scaly body, black and bright green on the upper and iridescent blue on the under side.

Lizards are very abundant in Central America, both as to species and numbers, but owing to their great agility and the protection offered by the dense vegetation and volcanic rocks, their favorite roosting places, it is exceedingly difficult to capture them alive.

On Election Day, Miss Lee will lecture on "When Old New York Was Young." The lecture will be repeated four times during the day--at 10.00 and 11.00 A. M. and at 2.00 and 3.00 P. M. No child will be allowed to attend the lecture but once during the day. This regulation is necessary to assure every child a seat.

It is unfortunate that the room is so small (seating only 100 persons), that it causes either a frequent repetition of lectures or disappointment to children, many of whom come long distances.

A Bulletin Board has been placed in the main hall for information received by the wireless telegraph. Hardly a day passes that some report is not heard. We are anticipating the return of two of the battleships the last of the month, when much interesting news will probably be received.

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Mr. Julius Wodiska, of New York, has presented the Children's Museum with a most acceptable collection of gems and precious stones for our Mineral Room. The collection includes twelve birth-stones.

Four years ago when the mineral collection was prepared such precious stones as we were able to obtain were used with mineral specimens to illustrate the uses of minerals, and although the desirability of a gem collection was realized and the effort made to secure it, funds were not available for the purpose, so the Museum was obliged to make the best use of what it already had and to wait and hope for better things.

It is a satisfaction to be told that this collection was offered because of what the Museum is now doing for the children of Brooklyn. Last spring, a visitor who spent an afternoon at the Museum was so impressed with the genuine appreciation and enjoyment of the children, and so convinced of the broadening and stimulating influence of the Museum that he mentally resolved to do something to further its purpose. With this thought he wisely appealed to Mr. Wodiska, his friend of many years, and Mr. Wodiska's generous and early response, the children will duly appreciate, we believe, as soon as we are prepared to display the collection suitably. We shall then take pleasure in publishing the list of gems and notes on their installation.

Edna Bliss, six years old, who has been visiting the Museum regularly ever since she was three years old, has given the Museum "Floss," her beautiful, tame, grey Squirrel. "Floss" is not afraid of visitors, is contented in her cage, and has once visited a school to pose as a subject for a nature lesson.

"Jack" is our tame Raccoon. He came from Florida about two months ago, when he was very small, and is now tame and purrs like a kitten. He follows us about the Museum and enjoys being petted by those who are kind to him. Several of the children visit him regularly every day and Jack is a source of amusement to all.

SPECIAL LECTURE.

Mr. Allen S. Williams will lecture on "Lion Taming and Wild Animal Taming," on Saturday afternoon, November 7th, at 2.30 P. M.

Mr. Williams has had much experience in taming animals and will illustrate the talk with lantern slides.

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LIBRARY NOTES.

The Library has received many recent calls for copies of the "Nature Study List" from teachers and librarians in Utah, South Carolina, and Massachusetts, as well as our own vicinity. The School Department of one library in a neighboring state sent a request for 300 copies of the list to distribute to teachers. As our supply was nearly exhausted, it was necessary in order to meet this demand, to print a limited second edition. One or two changes have been made in the titles under "General Nature Study," to include new books issued since the preparation of the first edition, in May.

The small amount of space available for the use of readers has been severely taxed during the past few weeks. We have been very glad to explain the character of the Library to several new classes in the Training School, and gratified to find that many students were ready to avail themselves at once of the opportunity to consult the books.

On several occasions, the Library has had the privilege of assisting a Mothers' Club in this neighborhood to a choice of the best books for studying birds, insects, and flowers, or called attention to attractive books for Christmas gifts. It has lately aided the Club in the selection of the best books on the "Moral Education of Children." While books upon this subject are outside the range of our special Library, the various bibliographies are always gladly used in giving desired information.

It is sometimes interesting to note a few of the reference questions which are presented by various readers. A high-school boy who is desirous of taking a course in an Agricultural College wished to learn the necessary qualifications for entering such a school, and another looked up various geographical subjects in anticipation of a civil-service examination. A grammar-school boy who hopes to be a doctor asked for some information about "contagious diseases." Another inquirer wished for the "*geography* of James Madison," while still another asked, "Haben Sie French Bücher?"

The third volume of the MUSEUM NEWS has received a word of commendation from the Chief Librarian of a distant city to whom it was recently sent in exchange for publications of his own library. He writes, "I am struck with their brightness and interest, and I enjoy the ability of the contributors to infuse life into what in the hands of so many would be left half-dead or wholly lifeless."

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LECTURE SCHEDULE
AT THE CHILDREN'S MUSEUM.

November 3rd, "When Old New York was Young" (Election Day).
10.00 and 11.00 A. M. 2.00 and 3.00 P. M.

See note.

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Grades 7A and 7B: Tuesdays at 4:00 P. M.

"Simple Machines: Their Construction and Uses."

November 10th, "The Principle and Uses of Levers."
November 17th, "How Pulleys are Used"
November 24th, "Inclined Planes, Screws, etc." **Miss Lee**

Grades 5A and 5B: Wednesdays at 4:00 P. M.

"Invertebrates."

November 4th, "Some Interesting Mollusks."
November 11th, "Lobsters, Crayfish and their Allies."
November 18th, "Starfishes and Sea-Urchins."
November 25th, "Stinging Animals of the Sea." **Miss Lee**

Grades 8A and 8B: Thursdays at 4:00 P M.

"Frictional Electricity."

November 5th, "How and Why Electricity is Produced by Friction."
November 12th, "Insulators and Conductors."
November 19th, "How Electrified Bodies Affect One Another."
November 26th, Holiday.—No Lecture. **Miss Lee**

Grades 6A and 6B: Fridays at 4:00 P. M.

"Geography of South America" (Continued).

November 6th, "Rivers and Cities of Brazil."
November 13th, "Industries of Brazil"
November 20th, "The Argentine Republic." **Miss Lee**

* * * * *

November 27th A Thanksgiving Lecture. **Miss Gallup**

Primary Grades: Saturdays at 10:30 A. M.

"How Some Animals Prepare for the Winter."

November 7th, "Bears."
November 14th, "Hares and Foxes."
November 21st, "Gnawing Animals."
November 28th, "Frogs and Snakes." **Miss Lee**

Primary Grades: Saturdays at 2.30 P. M.

November 7th, "Lion Taming and Wild Animal Taming."
Mr. Allen S. Williams

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"Domestic Fowls."

November 14th, "Ducks and Geese."
November 21st, "The Turkey and its Relatives."
November 28th, "Chickens and Pigeons." **Miss Gallup**

THE LECTURES ARE FREE TO THE PUBLIC.

Special lectures may be arranged for.—Apply to MISS ANNA B. GALLUP.

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THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES.

The Museum News

Central Museum, Eastern Parkway
Children's Museum, Bedford Park

VOL. 4 BROOKLYN, N. Y., DECEMBER, 1908. No. 3

HOW ANIMALS HIDE.

Obliterative Shading.

The term obliterative shading was applied by Mr. Abbott H. Thayer, the well known artist, to those variations in color which counteract or obliterate the lights and shadows that would otherwise render a protectively colored animal visible.

Obliterative shading, broadly speaking, is a darkening of the upper parts of the body which are in strong light, and lightening of the under parts which are in shadow. It is one of the many ways, and a very important one too, by which animals escape their enemies, or are enabled to steal unseen on their prey. That it should thus work alike to the benefit of pursuer and pursued is an instance of nature's impartiality. From her standpoint it is just as important that the lion and the leopard should get their dinners as that the zebra and antelope should escape being eaten. So, like the rivalry between gun and armorplate, the contest between the eaters and the eaten has gone on ever since animals came into existence. It is, of course, not an active contest carried on by intelligent beings, and it must be remembered that animals do not knowingly color themselves to resemble their surroundings. Existing conditions have been brought about, or are believed to have been brought about by the survival of those animals which were on the one hand enabled to escape their enemies, or on the other hand able to capture their prey; and, one of the important means of escape is by resembling a part of the landscape, keeping quiet and getting overlooked. The most perfect protective coloration becomes useless the moment the animal moves, hence the quail and rabbit lie close and may almost be stepped on before seeking refuge in flight.

The principles of obliterative shading were discovered by Mr. Thayer some years ago and their importance has been successfully demonstrated by him before various scientific societies here and abroad. The British Museum and other institutions in Europe have installed exhibits illustrating Mr. Thayer's discoveries, but no museum in the United States,

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not even that of the Brooklyn Institute had done so, although it had been on the "list of things to be done" for three years.

Being warned of the coming publication in the "Century Magazine" for June, of Mr. Gerald Thayer's Concealing Coloration of Animals, a series of models was hastily prepared and with the aid of Mr. Howard J. Shannon, the long planned exhibit materialized. Unforseen difficulties were encountered in the way of reflections and shifting lights, and the present exhibit prepared by Mr. Judy has been so installed as to overcome these troubles so far as possible, although they cannot be entirely avoided; for example, the models at present cannot be seen except by daylight. It must be borne in mind that the models are seen under much more trying circumstances than would occur in nature, but they emphasize the point that it is not enough for an animal simply to resemble its surroundings in color, the freaks of light and shade reveal its presence, and until these are offset, the creature is still in danger.

The preparation of this exhibit has aroused some little curiosity on the part of those who are unacquainted with the subject, and created much interest among those who had read the article in the "Century."

EGYPTIAN HIEROGLYPHICS.

Among the recent gifts and installations of Egyptian exhibits is a sepulchral stele of sandstone of very considerable dimensions (34 x 20 inches) which was purchased from the Cairo Museum by Mr. Alfred T. White during his trip of last season. Its peculiar representation of a doorway, familiarly known to Egyptologists as a "false door," dates it to the "Old Empire," to which the use of this form of sepulchral tablets was confined. It is therefore of earlier date than 2800 B. C. Such "false doors" were originally used in the period of the Old Empire—4800-2800 B. C.—to close an opening in the wall of an inner chamber of the tomb and were probably supposed to magically give entrance and exit to the spirit of the dead. They were subsequently built into the interior walls of tombs which had no inner chamber. The inscriptions carved on such tablets uniformly contain prayers for the food and drink on which the life of the spirit world was, in Egyptian belief, just as dependent as our own.

In addition to this prayer, which is a formula of unvarying character, the funeral tablets of earlier date also include documentation of name and office, or occupation of the deceased, and lists of relatives; to which in later times some personal biography relating to the occupant of the tomb frequently was added.

The attendants in the Museum gallery of Egyptian exhibits give the interesting advice that questions as to the nature of the hieroglyphic signs which are engraved on the "false door" have been frequently

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addressed to them. The following general information has consequently been incorporated in a label and is repeated with some additions here: The Egyptian hieroglyphic signs are, in origin, universally pictures of natural objects. Many of them are, however, used as alphabetic letters, indicating the initial sound of the name of the object depicted. Thus, the Egyptian name of lion being "labo," the picture of the lion became the sign for the alphabetic letter "L." Other pictures represented syllables, corresponding to the name of the picture, a use exactly like that found in a modern "rebus." Still others are wholly pictorial in significance. These were, undoubtedly, the earliest. Thus Egyptian writing was originally pictorial, then syllabic, and finally alphabetic; but in the developed system, there were many survivals of the pictorial and syllabic stages of development.

The Egyptian hieroglyphic signs were first successfully read by the Frenchman Jean François Champollion (1790-1832), and his discoveries were formally announced in 1821-1822. His great discovery included, not only the deciphering of the signs, but also the deciphering of their language. Champollion was the first to announce that the Coptic language, which is still used in the Christian missals and Bibles of the Egyptian Coptic Church, is a modified survival of the old Egyptian language; just as the Copts themselves are the descendants of the ancient Egyptians. As regards spoken use, Coptic is a "dead" language, but in literary use it is familiar to the Coptic priests and to Oriental scholars. Thus Champollion's knowledge of Coptic was an essential antecedent to his reading of the Egyptian inscriptions, after he had deciphered the signs. It is evident that the knowledge of the alphabetic signs does not alone suffice for the reading of any language, for in that case we should all be masters, at least of French, Italian and Spanish.

The famous Egyptologist, Emanuel de Rougé, announced in 1859 that the Phenician alphabet, from which our own letters are derived, is a borrowed modification of the Egyptian alphabetic signs. Although this discovery has been contested, its truth appears probable.

Besides the carved and monumental hieroglyphics others were in use, derived from them, for the writing on papyrus. These forms are naturally less pictorial and more conventional. It is from this so-called "hieratic" writing that the Phenician letters were derived by de Rougé. Thus, in the monumental hieroglyphics, the picture of a sieve stood for the letter "H." In hieratic writing this was conventionalized into a circle with a single cross line which stood for the intersecting wires of the sieve. In Phenician writing the sieve was represented by a parallelogram instead of a circle, the cross line being retained. The Greeks dropped the upper and the lower bar, retaining the middle bar, and thus reached the later form of the capital letter H, which was used in the early

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Greek alphabet and passed down to us from the Latin. The derivation of the letter "A" from an eagle, of the letter "L" from a lion and of other letters from other pictures, are easily followed, when the appropriate illustrations are available, as offered in Isaac Taylor's most readable and interesting book, the "History of the Alphabet." This work should certainly appear in every list of the "hundred best books" which are now becoming frequent.

WM. H. GOODYEAR.

RECENT INSTALLATIONS AND ACQUISITIONS.

Interesting collections of pottery and other objects from the Indian towns of the Rio Grande in New Mexico have been installed in the stairway hall adjacent to the main southwestern hall in the Ethnological Department of the Museum. The decorations of this section consist of two pictures by Mr. H. B. Judy, one, on the west side, of the town of Isleta, and the other, on the east side, of the town of Laguna. The objects exhibited are chiefly from Jemez and Cochiti and other pueblos of the Karesan and Tañoan tribes. In addition, there is shown in the case on the west side of the hall a collection of pottery and associated objects excavated from a prehistoric Indian burial place at Red Rock, near Fort Wingate in northeastern Arizona, and collected by the Museum expedition in 1903. A case of Navajo silver ornaments has been installed recently in the southwestern hall.

A family of timber wolves from Wyoming including father, mother and seven young, has been just placed on exhibition in the case devoted to the dogs, bears and raccoons.

Wolves have been exterminated throughout so large a portion of the United States that it may surprise our readers to be told that they are still sufficiently numerous in the West to cause an annual loss to stockmen and farmers of several million dollars; this aside from the destruction of game in Government preserves and State forests. They are even found in some numbers so far East as Wisconsin and northern Michigan, and in 1907, at least 118 wolves were killed in the latter State alone.

A good idea of the damage caused by wolves may be obtained by the Bulletin of the Division of Forest Service, Department of Agriculture, by Vernon Bailey, entitled "Wolves in Relation to Stock, Game, and the National Forest Reserves."

Just how many kinds or species of wolves there are in North America, and what they should be called, are matters still in question. We have provisionally called our Wyoming animals *Canis occidentalis* and if any of our scientific friends object to this we shall be glad to have them supply a better name.

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The plans for the Hall of Invertebrates include a series of large paintings showing some of the more beautiful and striking forms as they occur in nature. The first of these, now in place, was painted by Mr. H. B. Judy from studies in the Bahamas, and shows a coral reef, the rays of a tropical sun streaming through the clear water, lighting up the white coral sand and bringing out the brilliant colors of the living corals.

We wish it were possible to say that other pictures will promptly follow, but it may be some time before another can be placed on exhibition, though this of the coral reef will give an idea of what it is hoped to do in making the collections beautiful as well as instructive.

Thanks to the Collection Fund it has again been possible to purchase a number of important and interesting animals badly needed in the exhibition series, including representatives of several families of insect eating mammals. None of these are large, but the importance of any animal, from the naturalist's standpoint, does not depend upon its size, but on its structure and relation to other animals, the mouse being in this respect the equal of the elephant, and each of the half dozen little animals purchased represents a family. There are also a number of important insects, star-fishes, sea urchins and crustaceans, these last to form the beginning of an exhibit of this class of animals hitherto unrepresented in the systematic series.

The big leather turtle shown for some time in the Aquarium departed its life in October, and by the kindness of Director Townsend was sent to this Museum.

A cast is being made of it and in due time a reproduction of this, the largest of living turtles, will be placed near the other reptiles. The skeleton which is entirely different from that of any other turtle will also be placed on exhibition as soon as possible; thus does the loss of the Aquarium become our gain.

During the summer the Indian pottery, for some time on exhibition in the Central Section, was removed, and recently the last invertebrate has been taken from the Hall of Vertebrates, west long gallery. The minerals are now the only objects in this hall that do not belong there and as soon as cases are provided they too will be transferred to other quarters, and there will be a general re-arranging of amphibians, reptiles and birds. These last are so scatterred throughout the Museum that few visitors realize how many birds are in the collection, nor how well the group is represented.

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THE COSMO COLLECTION.

Since our notice of the Cosmo Collection, published in the last number of the Museum News, the first volume has been received. It contains one hundred and ten illustrations in photogravure, of remarkably fine quality, distributed between the arts of painting, sculpture and architecture; each illustration being faced by its appropriate page of text, which continues to show the discriminating authorship indicated in the specimen sheets. The absence of fulsome or unqualified praise for the works of art included in the choice of illustration, is a noteworthy excellence of the publication and gives the touch of originality to its text.

NOTES.

Anent Dr. Gadow's lectures before the Institute on the "Colors of Birds and Reptiles and the Influence of Environment, Heredity and Natural Selection" in the last of which attention was directed to the artistic tastes of birds, we would call attention to the Museum exhibit of nests of South American birds. In this exhibit the individual tastes of three birds, or three pairs of birds, is well illustrated by three nests of the Brazilian Yellow-bellied Flycatcher (*Rhynchocyclus flaviventris*). The three nests in question were found in the same general locality, but each is constructed of a distinct kind of material, distinct not only in the character of the nesting material but also in its color. The materials found in each nest were doubtless equally abundant, yet one nest is constructed entirely of black fibres and each of the others of a distinct shade of greyish brown fibres. Not only was the character of the materials employed distinct in each case, but the nest owners displayed considerable individual taste in the execution and style of the nest structure.

In this same exhibit another example of the individual tastes of birds of the same species is seen in the nests of the yellow Oriole (*Icterus xanthornus*).

A recent magazine article on the Gila Monster tempts one to say that this is the most deadly animal that ever roamed through the columns of the press.

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LIBRARY NOTES.

An account of the new Timber Wolf Group will be found on another page. In this connection, a recent Bulletin (No. 72), issued by the U. S. Forest Service, entitled "Wolves in Relation to Stock, Game, and the National Forest Reserves" by Vernon Bailey, treats the subject from a practical and economic standpoint, "the enormous losses suffered by stockmen on the Western cattle ranges and the destruction of game on forest reserves, game preserves, and in national parks" having led to a special investigation "to ascertain the best methods for destroying these pests." Several illustrations and maps add to the interest and value of the Bulletin.

The Department of Agriculture has recently issued a pamphlet by D. E. Lantz on "Deer Farming in the United States," which will be of special interest to Museum visitors interested in the specimen of deer lately added to the deer group on the National Science floor. The pamphlet discusses briefly the economic possibilities of raising deer and elk in the United States. "It is believed that when the restrictions now imposed by State laws are removed this business may be made an important and highly profitable industry, especially since it will be the means of utilizing much otherwise unproductive land." Some of the division headings are "Importance of the Deer Family"; "Habits of Elk"; "Elk Venison"; "Management of Elk in Enclosures"; "Breeding and Management of the Virginia Deer"; "Wild Deer in Private Game Preserves"; and "Game Laws in Relation to Deer Farming." The little pamphlet of twenty pages has two good illustrations.

An important accession of the past month is Prisse d'Avennes's "Histoire de l'art egyptien." The plates are mostly in color. Professor William H. Goodyear says of the work "The finest color publication ever made for Ancient Egypt * * * It is wholly unique * * * for ornament * * * and an indispensable book."

A question very commonly asked of the Library is as to the English meaning of Indian names, particularly names of places, such requests not infrequently reaching us by mail.

So far as localities in New York are concerned the reply is made easy by the publication of Bulletin 108, New York State Museum, which contains the Aboriginal Place Names of New York. As for other words we are, in many cases, waiting for the completion of the dictionary of Indian words, now being prepared by the Bureau of American Ethnology.

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Patrons of the Library frequently express satisfaction with its quiet and facilities for work. The alcove tables and comfortable chairs with the books immediately at hand make research and study conditions unusually favorable.

Mr. Gronberger of the Library of the United States National Museum made a brief call at the Library a short time since.

The index to volume 3 of the MUSEUM NEWS and title-pages to volumes 1, 2 and 3 have just been published. Copies have been mailed to libraries and others who have requested them. If any who have not received them desire same, they made be had upon application to the Librarian.

The supply of the numbers of the MUSEUM NEWS for April and May, 1905, has been exhausted and the Library will much appreciate the return of any copies now in the hands of readers.

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The Children's Museum.

Bedford Park.

COFFEE CULTURE IN GUATEMALA.

Coffee is cultivated in Guatemala on large plantations by German and United States planters and on a very much smaller scale by a great number of Guatemalans. A famous coffee belt follows the southern slope of a chain of volcanic mountains, which runs roughly parallel with the Pacific shore line. Here the extremely fertile soil in vast virgin forests, cheap labor, and an abundance of streams furnishing power to drive machinery and water to wash coffee, offer unequaled opportunities to the planter.

The writer spent a month during the past summer on his brother's coffee plantation "Olas de Moka," located on the Pacific side among the foothills of Mount Atitlan, an inactive volcano, over 13,000 feet high. "Olas de Moka" lies on a terrace overlooking the river Moka, a turbulent mountain stream, which issues from a canon above the plantation and in its rapid descent to the Pacific disappears again in a narrow gorge. The main or dwelling house, a large one story and attic structure, built of wood entirely supplied from timber grown on the plantation, is surrounded by a broad veranda adorned with orchids and other tropical plants, from which can be seen the machinery buildings and large cement drying floors. On a hill above, partly hidden by trees, are the huts of an Indian village. From an altitude of 2,500 feet, the plantation extends beyond the Indian village to an elevation of 4,000 feet. The river Moka furnishes the power for the coffee machinery and electric plant, and its clear water is distributed all over the premises. A spring of sparkling water supplies the household.

The coffee thrives best in a humid, warm climate and at altitudes varying rom 1,000 to 5,000 feet, but altitudes of from 3,000 to 4,000 feet give the best results, both as to quality and quantity. Coffee trees usually begin to bear from the third year after planting, and are in their prime from the seventh to the twelfth year, although this state may be much prolonged under proper conditions and treatment. Trees fifty years old and more have been known to give excellent crops. In a wild State the trees, although always slender, grow from fifteen to twenty feet high. In cultivation they are pruned and seldom allowed to exceed more than six to ten feet. One year old trees, twelve to sixteen inches high, are set out from nurseries at distances of from eight to ten feet. Shade is an important factor in coffee culture, and the lower the location of a plantation the

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more shade is needed. Above 4,000 feet shade is necessary only on slopes exposed to the morning sun, for dew drops act as lenses, concentrating the light rays and burning the leaves. As the prevailing forest trees prove unsuitable for shade, the banana tree is temporarily employed, until planted shade trees attain sufficient height.

The luxuriant and rapid growth of weeds is a constant annoyance to the planter, young plantations with insufficient shade having to be cleaned six or eight times, whereas, well-shaded plantations require but three cleanings in a year.

The flowering season of the coffee tree extends from January to April, this season being divided in from two to four distinct blooms. The fruit begins to ripen in September, when harvesting commences and lasts until January, the trees usually being picked over three times. A tree in good bearing yields from two to three pounds of beans. The coffee plantation, a pleasing sight at all times, is particularly beautiful in the flowering season, when masses of fragrant, snow-white blossoms shine out among glistening evergreen leaves and also when in the autumn the branches are laden with cherry-like dark scarlet fruit. Insect pests or plant parasites, so very destructive in some coffee growing regions, are almost unknown in Guatemala. Young trees, however, are frequently killed by rodents which eat the roots.

American grown coffee is roughly divided in two classes—Brazilian and Central American—the difference consisting in the treatment of the beans after picking. In Brazil, which grows more coffee than all other coffee regions of the world combined, the beans are dried in the flesh, the pulp being removed afterwards. This gives to the Brazilian coffee its characteristic strong and bitter taste. In Central America the flesh is first removed, before the beans are dried. This process, exercised with the greatest care, results in a product prized for its superior flavor and mildness.

At "Olas de Moka" and other plantations of modern equipment coffee is treated by the following process:

Immediately after picking, "the cherries," as the fruit is called, are conveyed to the receiving house to be measured and dropped into large cement tanks filled with water. The light or hollow cherries float on top and are carried by the overflow into another tank to be treated separately, but in the same manner as the sound, heavy cherries, which sink to the bottom. Next the cherries pass in running water through an arrangement of canals and boxes, where impurities, such as gravel and stones are retained, to the pulping machine where the flesh is torn off by two copper lined, finely toothed cylinders, moving in opposite directions, and so adjusted that only the beans are allowed to pass. The pulp is dropped into a gutter of running water and deposited at some distance to be used

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as a fertilizer after decomposition. After leaving the pulping machine the beans enter the fermenting tanks through a system of grated, double bottom canals, which again separates them, passing the heavy beans into one tank while the lighter ones are carried on into another. Here they remain for one or two days more, according to the temperature, until every particle of pulp can be washed off and the beans left white and clean. Next comes the process of drying, to be performed by either the open air or hot air treatment. In the open air treatment the coffee is thinly spread on large cemented floors and continuously raked until night or an approaching rain necessitates removal to a convenient shelter. This process requires from ten to twenty days according to the weather conditions. In the hot air treatment the coffee is thrown into large revolving cylinders, provided with an arrangement of perforated pipes through which hot air is pressed by centrifugal ventilators. The cylinders have a capacity of 5,000 to 10,000 pounds and the drying process lasts from twenty-four to thirty-six hours.

After drying, the bean is still invested in a thin shell, called parchment, which is removed by friction and winnowing. The shelled coffee next passes through a polishing machine from whence it is conducted to the sizer, a cylinder provided with a spiral tube on the inside and perforated throughout its length with holes of regularly increasing size. There finally remains the separation of the so-called pearl or peaberry bean, which is accomplished in another perforated cylinder, so adjusted that the round, but not the flat bean can pass. Peaberry is not, as is sometimes believed, a distinct variety of coffee, but the coalescence of the two flat seeds within the fruit, thus producing the appearance of a single, rounded seed, usually of small size—whence the name. Bags containing 125 to 150 pounds of coffee are the usual weight for shipment.

Indian laborers in charge of white or half breed overseers are employed at "Olas de Moka" and the servants, excepting the cook who is a half breed, are also Indians. These Indians readily learn mechanical trades, such as cement working, carpentering, cobbling, harness making, etc., and while they are slow and neglectful they are obedient and respectful.

The Indians of Guatemala are an agricultural and peaceful people divided into many tribes often different in language. Each village has its characteristic costume made of home spun cloth, at times gaudy in design, but often remarkably graceful and beautiful. The men wear a shirt and loose trunks tied with a sash and the women a sleeveless waist and short skirt. Sandals are the only foot wear. Their dwellings are thatched huts of palm leaves, sedges supported by bamboo sticks. A low platform of rough boards covered with matting is the only attempt at

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furnishing, but even this is frequently dispensed with, the Indians being content to sleep on the bare floor wrapped in a blanket. Dogs, pigs, and poultry, the usual companions of a family, also freely enter the hut. Although most of the larger villages have a Catholic church and a school, very few of the natives can read or write, many not even speaking Spanish, the official language of the country.

Famine in Guatemala is unknown, for Nature provides so many products suitable for food that no one needs to go hungry.

Planters own great herds of cattle, besides sheep, pigs, and poultry, so that a supply of fresh meat is assured. Such fruits and vegetables as are not grown on the plantation can be obtained daily from Indian peddlers. A variety of game is found in the forest and the rivers contain fish, shrimp, and a species of pocket crab of delicious flavor.

A pleasant intercourse is carried on between the American and German planters, who frequently visit each other and take especial pride in the comfort and up-to-date equipment of their establishments. Their homes are well supplied with current literature and even pianos may be seen in these out-of-the-way places.

Volcanoes are dominant features of the landscape. Atitlan, the volcano mentioned heretofore, as seen from "Olas de Moka" presents an ever fascinating view. From elevated points of the plantation can be seen a magnificent panorama of the low lands and the Pacific Ocean.

Earthquakes are frequent, three of slight vibration occurring during the visit of the writer. The eruption of the volcano, Santa Maria, in the fall of 1902, buried many plantations in lava and ashes. In the same year, preceding this eruption, an earthquake partially destroyed the important city of Inesaltmango. At this time the river Moka suddenly ran dry. A landslide in the mountains above had formed a dam and when the accumulated water finally burst through, it came down with terrific force, cutting a new river bed in its course. A bridge across the old and dry river bed still remains as "Olas de Moka."

GEORGE P. ENGELHARDT.

NOTES.

Miss Gallup gave an illustrated talk to the Thursday Morning Club at Great Barrington, Massachusetts, on November 18th, entitled, "The Work of the Children's Museum." The members of the club are actively working to provide suitable entertainment and instruction for the boys and girls of their town through the medium of recreation rooms and a Nature Department. Practical suggestions were offered in the application of children's museum methods to philanthropic work of this character.

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The Christmas Story will be illustrated with lantern slides and will be repeated on Saturday, December 26th, at 10:30 A. M. and 2:30 P. M.

The Museum attendance for October was 13,375 the largest for any one month in the history of the Museum and a gain of 3,317 over the corresponding month for 1907. The attendance at the lectures was 3,294.

The "Mother's Club" of the Kindergarten Department in Public school 106, with four of the kindergarten teachers visited the Museum on Wednesday, November 11th. A lecture on "Bird's and Their Nesting Habits" was given, and the mothers expressed much interest in the Museum and its work for children. It was a pleasure to welcome this club last April and we were glad to have the mothers request the privilege of meeting with us again next year.

The Children's Museum was represented at the Historical Bazaar given at the Plaza Hotel in New York on Friday and Saturday, November 13th and 14th, by two historical models—one of "The Frontiersman Fighting the Indians in Ambush" and typifying the earliest attempts at military defense by the white man in this country, and the other of "Myles Standish, the soldier of early Colonial days." These two models are the beginning of a series planned to illustrate the historic development of the Army and Navy of the United States.

A set of photographs of the historic exhibits in the Children's Museum was displayed with the models.

Our children will be glad to know that we have now installed among the "Animal Homes" a group of common red foxes (*Vulpes fulva* Desmarest) consisting of a mother and five young. The group replaces the one lent us by the Central Museum about two years ago, which, when taken away was greatly missed by our many visitors.

The group is artistically mounted, the animals having a natural, life-like appearance. The young foxes were caught in Vermont and shipped to us alive. The work was executed at our taxidermic department by Mr. J. William Critchley.

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Now that the series of models ilustrating the six types of European colonists who effected permanent settlement on our shores has been completed, we wish to express our especial thanks to Miss Blanche Moses for her kind assistance in securing material for us. After many days of fruitless searching for wall paper for the New England parlor, Miss Bowen laid her needs before Miss Moses, whose father dealt in choice wall papers. Miss Moses, who spent a whole afternoon in looking over some rare old samples, finally came across a piece of Chinese paper imported nearly two hundred years ago. This genuine antique in Chinese style, which was at the height of fashion in that period, was precisely the material needed to complete the group which has been so generally enjoyed and admired.

The latest addition to the Children's Museum is a lemur. This tiny animal, "Tangbang" by name, was brought to this country by Mr. D. Southard, a missionary from Sierra Leone in West Africa, and presented to the Museum early in November. "Tangbang" in his tropical home lived among the banana trees and is even now fond of bananas. He is only three inches long—has a very bushy tail, staring brown eyes, thin, transparent ears, and a coat of fine, soft, light brown fur.

In the day time "Tangbang" stays in his warm nest of flannel and cotton batting near the radiator, but at night he roams about searching for flies and cockroaches which he devours greedily. His chief article of diet is malted milk which he laps like a kitten.

Last May, Mr. Wallace P. Groom, gave a lecture to our children on "Cotton," and distributed a number of cotton seeds, explaining the necessary care in raising the plant. This fall we have heard of results from the seeds. One of our regular patrons, Charles Miller, age eleven years, has a cotton plant with the boll already formed, which he has brought to the Museum to exhibit. It has been both pleasant and instructive to the children who planted the seeds to watch their development during the summer.

Teachers who wish to illustrate the transformation of moths may obtain a limited number of Cecropia cocoons, free of charge, by applying at the Children's Museum.

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LIBRARY NOTES.

Among the Nature books recently added to the Library are two upon Trees, which will be of value to older students. One large volume, now out of print, is entitled "Typical Elms and Other Trees of Massachusetts." In the descriptive text, Lorin L. Dame gives an interesting account of many famous and historic trees, such as the "Washington Elm" at Cambridge, and the "Great Tree" on Boston Common. The book is fully illustrated by beautiful full-paged plates furnished by Henry Brooks.

Another attractive tree book is the recently published volume of "Studies of Fruit and Nut Bearing Trees" by Edith R. Mosher of the Forest Service, U. S. Department of Agriculture. It contains many excellent drawings of blossoms and fruits, with appropriate quotations from poets and prose writers.

The collection of bird books has received a notable addition in the "Birds of Britain" by Lewis J. Bonhote, with one hundred superb illustrations in color by H. E. Dresser.

To the little fall exhibit of picture bulletins have been added from time to time many interesting berries and "wild fruits." Among them might be mentioned the Solomon's seal and withe rod, the showy berries of the Jack-in-the-pulpit, bitter sweet and box thorn, the curious oval fruit of the white baneberry on its thick red stalk, and the twisted stems of the dodder closely covered with tiny seed vessels.

The Library congratulates the Charleston Museum upon the opening of its Museum Library on October 31st, when a special invitation was extended to school children to attend. It is interesting to note that not only was the Library "the first department of the Museum to be installed in the new building and opened to the public," but "also noteworthy that it is the first free public reading room in the city."

CHRISTMAS BOOKS.

In accordance with the custom of the past few years, the Children's Museum Library has again prepared for its "Christmas Bookshelf" a selection of recent and attractive books. These books have all been chosen from our own Library, and mainly from the books added during the past year, the aim being to aid parents and teachers in the choice of books for Christmas gifts, by showing them some of the best books for boys and girls that have been recently published. Many of the books are also desirable as additions to class-room libraries.

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LECTURE SCHEDULE
AT THE CHILDREN'S MUSEUM.

Grades 7A and 7B: Tuesdays at 4:00 P. M.

Heat.

December 1st, Production of Heat.
December 8th, Conduction, Convection and Radiation.
December 15th, The Chemistry of Fire. **Miss Lee**

Grades 5A and 5B: Wednesdays at 4:00 P. M.

Stories About Animals.

December 2nd, Animals That Wear Disguises.
December 9th, Animals That Set Traps.
December 16th, Animal Miners. **Miss Lee**

Grades 8A and 8B: Thursdays at 4:00 P. M.

Static Electricity.
(Continued).

December 3rd, The Leyden Jar and Other Condensers.
December 10th, Electric Machines.
December 17th, Atmospheric Electricity. **Miss Lee**

Grades 6A and 6B: Fridays at 4:00 P. M.

Geography of Canada.

December 4th, The Rockies of Canada.
December 11th, Ontario Province.
December 18th, Picturesque Quebec. **Miss Lee**

Primary Grades: Saturdays at 10:30 A. M.

Bird Life.

December 5th, How and Why Birds Travel.
December 12th, Birds That Stay With Us in the Winter.
December 19th, How Birds Make Their Living. **Miss Lee**

* * * * *

December 26th, A Christmas Story. **Miss Gallup**

Primary Grades: Saturdays at 2.30 P. M.

Animal Pets and How to Care for Them.

December, 5th, Alligators and Crocodiles.
December, 12th, Snakes.
December, 19th, Lizards.

* * * * * * *

December 26th, A Christmas Story. **Miss Gallup**

THE LECTURES ARE FREE TO THE PUBLIC.

Special lectures may be arranged for.—Apply to MISS ANNA B. GALLUP.

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THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES.

The Museum News

Central Museum, Eastern Parkway
Children's Museum, Bedford Park

VOL. 4 BROOKLYN, N. Y., JANUARY, 1909. NO. 4

THE DURYEA LIBRARY OF ART AND ARCHITECTURE.

A Correction.

We very much regret that in the article on this library in the NEWS for November, it was wrongly credited to Mr. Charles B. Duryea when it should, of course, have been recorded as created by the bequest of Samuel Bowne Duryea, a name well known to residents of Brooklyn.

A few of the many works already acquired through this bequest have been noted, including a number of monographs indispensable to the student of the Art and Architecture of Egypt, Greece and Rome. The last important purchase from the Duryea fund is Schulz's Mediæval Monuments of Lower Italy, four volumes with atlas in folio. To quote Professor Goodyear, "This is the most important book on the architecture of Apulia, otherwise almost unknown. Salazaro (whose work is in the Library) covers the painting and sculpture of this territory. It is one of the greatest books of modern times."

THE GUACHARO BIRD AND SEA LION GROUPS.

NATURE, in noting the recent installation of the Guacharo Bird and Sea Lion groups remarks, "In the matter of realistic groups of this nature, the Brooklyn and other American museums are leaving our own Natural History Museum far behind."

This is very flattering, but then in these days no one institution, be it never so great, can cover the entire field of nature in its exhibits. The British Museum has, aside from its vast systematic exhibits, its comprehensive index series, its illustrations of mimicry, variation and other phenomena and may well be excused for not indulging in many great groups.

Moreover, if we remember aright, when in the early eighties the British Museum began its series of British Birds, it was the first great Museum to break away from tradition and show animals amid their natural surroundings.

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THE HOATZIN.

In the central section, on the second floor of the Museum there has been recently installed a group showing the adult, young in various stages of development, nests and eggs of one of the strangest of birds, known as the Hoatzin.

There is a distant relationship between hoatzin and the fowls and pigeons, but the bird possesses so many anatomical peculiarities that zoologists have placed it in a separate order of birds that is represented by this single species.

The young of this curious bird, although they haven't webbed feet, are more or less aquatic and invariably seek the water where they dive and swim skillfully, as a means of escape from their enemies; but the adult birds never go into the water. This singular aquatic habit or instinct of the young hoatzin is not, however, its only unusual feature, for during the earlier weeks of its existence the wings which are furnished with a pair of small but quite strong, well-curved claws, are used as legs. These claws, which constitute the terminal joints on what corresponds to the thumb and index fingers, are dropped when the wings' quills are grown.

In the presence of these claws and the use of the wings as legs the hoatzin, in a way, fills the gap between existing birds and their three-clawed, reptile-like ancestor Archaeopteryx.

Hoatzins are found throughout northern South America from Colombia and Guiana southwards to Bolivia. They live amid the branches of the trees and bushes that border ponds, streams and protected bays and lagoons on the sea coast.

In the different regions where found, they are known under a variety of names. In British Guiana the name most commonly heard is "Hanna" but it is equally well known as the "Stinking Pheasant." In the Orinoco region of Venezuela the names most commonly employed are Guacharaca de Agua and Chinchena, while on the Amazon it is called Cigana, and by English speaking people "Gypsy" while the aboriginal name is Hoatzin, that employed by Hernandez its first describer.

In the Orinoco region Hoatzin are common from the delta up as far as the mouth of the Meta river, a short distance below the first great cataract, the falls of Atures.

These birds keep to the tops of the trees and bushes, that overhang the water and in these localities form almost impenetrable jungles. In the early mornings and late in the afternoons the birds may be seen perched at the tops of the trees or bushes apparently sunning themselves, but during the heat of the day, even in localities where they are very abundant, not a bird will be in sight. At such times they are hidden among the branches,

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concealed from the sun's fierce rays by thick foliage. Hoatzin seem always to be sluggish and whether from the fact that the thickets in which they live supply both a safe and shady retreat and an ample supply of food, or that they have few enemies and are seldom disturbed the bird is rarely seen in flight. The wings are large and ample compared with the size and weight of the body, but the flight is weak and labored, and never long sustained: I doubt if I have ever seen one fly for more than one hundred yards. The feeble flight is due to the fact that the front part of the breast bone is cut away to accommodate a large pouch, or crop, into which pass the leaves on which the Hoatzin largely feeds. The same localities are occupied from year to year and the colonies seem just about to hold their own in point of numbers. The only cry I have heard Hoatzin utter is one resembling the nasal hiss of the black vulture, but is much louder and can be heard from a considerable distance. During the mating season the cry is often heard but at other times unless one penetrates into the birds' haunts or startles them otherwise, such as firing a gun near one of their colonies, they are usually silent. When startled there is a great flappings of wings and much confusion as the birds jump from point to point in an effort to escape from the tangle of the branches among which they have been resting. But when once free from surrounding limbs, they fly for only a short distance. When they again settle it is usually among the slender twigs at the extreme tops or outer edges of the trees or bushes and as the feet of the hoatzin are large, not well fitted for grasping slender twigs, and the body is heavy, there is a great deal of energy expended in balancing and more flapping of the wings before equilibrium is obtained.

When in a state of excitement the crest is fully expanded, the bright blue color on the sides of the face seems to grow more intense, the bird hisses its displeasure, and, carefully balanced on the topmost twigs of the bushes with fully expanded wings and tail held rigid, presents an artistically pleasing picture.

When at rest, the weight of the body is supported on a patch of thickened callous skin covering the broad flattened posterior end of the sternum or breast-bone, and medium sized nearly horizontal limbs are selected for perching. Although the feet are large and strong they probably sustain little of the weight of a resting bird, but are most useful to it when climbing among the branches while feeding on the tender leaves and buds. In this climbing about amid tangled branches adult birds use their wings quite as much and quite in the same way that the young use theirs, probably an inherited habit, but instead of depending on claws that may catch and help pull the body along the large wings might be likened to a pair of paddle wheels that force the large quills between or in front

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of surrounding branches and are thus used to help pull or thrust the body forward.

The food consists of the leaves and buds of the various kinds of trees and bushes, found on the banks of streams and ponds and the sea coast, as well as species of *Arum*.

The breeding season varies considerably in different localities. On the middle stretches of the Orinoco it extends from early in June until mid September, that is during the height of the rainy season. In the hot low lands in British Guiana, Mr. Quelch* found the nesting time to extend from December to July and he believed it to be continuous throughout the year.

The nest of the Hoatzin is a slight platform of dead twigs loosely laid together, and frequently with but a very frail support placed far out toward the tips of long slender horizontal branches. Mr. Quelch from his observations concluded that nests were often made use of more than once and cited an instance of finding the same nest in use after an interval of seven months. In my own collecting on the Orinoco covering a period of four nesting seasons I have not observed the use of old nests. The Hoatzin as far as I am aware, never goes onto the ground and in the building of their nests the twigs employed are secured by being broken with the bill from dead branches. The sticks are laid together so loosely and the whole structure is so slight that the eggs are readily seen through the bottom of the nest.

Two or three eggs are usually found in a nest, rarely four or five, but Mr. Quelch reported finding six in one nest. There is more or less variation in the shape, size, general color and markings of the eggs. Usually, however, they are ovate in form and the average size of a series of twenty-four now at hand, measure 46.2 millimetres long by 32.9 millimetres in diameter (1.8 x 1.3 inches). They are about the size of an ordinary bantam's egg. Ordinarily the general color is a pinkish cream color marked with dots, spots and splashes scattered over the entire surface but most thickly at the larger end. The markings are in two series the outer of a reddish brown color which overlie an inner series which are a pale lavender in color. Within forty-eight hours after birth, the young begin to crawl about, using the bill, the feet and the wing claws to pull themselves from place to place. I believe the nests are always placed over the water and rarely more than a few feet from its surface. A nest containing young birds, even if not over two or three days old, must be approached with extreme caution if one would see the young in the nest; for at the first alarm the young quickly draw themselves to the edge of

*On the Habits of the Hoatzin (Opisthocomus cristatus) Ibis: 1890: 827-885.

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the nest and if the danger seems to threaten they drop into the water, dive out of sight and swimming for some distance under the water will come to the surface at some point where they are afforded concealment. It is doubtful if the young are ever found in the nest when more than four or five days old.

Hunting Hoatzin is hard, tedious and far from pleasant work, as it means the continuous pushing and hauling of one's canoe through thickets of vines and bushes that are frequently beset with sharp thorns and usually swarming with vicious biting ants and tenanted with not less irascible colonies of wasps. It may not be out of place here to reproduce a paragraph from the writer's report on the Department of Ornithology* taken from his journal and relating some experiences in collecting young hoatzin, for this group, at Agua Salada de Ciudad Bolivar in August, 1907.

"After breakfast Don Emilio and I went down to the lagoon, took a "curiara (dug-out canoe) and worked our way into what we believed to "be the centre of the breeding grounds of the Hoatzin. After nearly five "hours of hard work when we were on the point of giving up in despair "for the day, and were taking a breathing spell after fighting our way "through a particularly trying lot of vines, we suddenly became conscious "that a motionless little downy-covered black ball perched on a branch "some 18 inches above the water and not to exceed a couple of yards from "us was a Hoatzin chick! No nest was in sight nearer than a distance "of about 200 yards, and yet the bird was a downy young! I thought to "take it alive, so the canoe was worked slowly, carefully forward, but, "vain hope, when within about two feet of our prey, it dropped suddenly "into the water, dived and disappeared. After a long wait and patient "watching it was again discovered, this time with barely the head out of "the water and admirably hidden by a mass of surrounding floating "rubbish and dead leaves. We again tried to secure it in the hand, but "another dive foiled us. By more patient waiting and watching it was "discovered for the third time and lost as before. After our patience had "been rewarded by finding it for the fourth time we took no further "chances and ended the hunt with a charge of fine shot."

These difficulties may explain why it is that, aside from the group shown by the U. S. National Museum at St. Louis in 1904, no museum seems to have exhibited a group of these curious birds that included the young.

GEO. K. CHERRIE.

*Museums of the Brooklyn Institute of Arts and Sciences Report for the year 1907.

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A LARGE TURTLE.

A cast of the great Leather-back or Lyre Turtle, from the specimen given by the New York Zoological Society, has just been placed on exhibition. It may sound boastful, but really it is the finest representation of this turtle ever displayed, besides being one of the largest, if not the largest, of turtles actually weighed and measured. The weight was over 840 pounds, for, when on the scales, the large front flippers hung down and rested partially on the ground. The total length, measured along the curve from nose to tail, is 6 ft. 10 in., and the shell along the curve is 5 ft. 2 in. From tip to tip of the flippers over the shoulders is 8 ft. 9 in., the circumference at the widest part 7 ft. 2 in.

If there are authentic records of greater weights and measures we should be pleased to receive and publish them.

LIBRARY NOTES.

A not infrequent remark is "I did not know there was a Library at the Museum." It cannot be too often emphasized that the Library is a free public reference library covering art and the sciences, particularly natural science.

A recent addition to the book collection is The Life of James McNeill Whistler by E. R. and J. Pennell published this autumn. The columns of the daily papers and of the Book Reviews have commented upon this work so fully that it seems unnecessary to add to the announcement that it is in the Library. The writing of the biography was undertaken at Whistler's request. It is a most readable book, alive with anecdotes of the artist, very fully illustrated, and forms an important contribution to the literature of Whistler. The work is of special interest to Museum visitors on account of the painting of Miss Leyland by Whistler which hangs in our own gallery.

The Portfolio of Industrial Art published by the South Kensington Museum (now called the Victoria and Albert Museum), London, has been added to the Library. This consists of loose plates in color reproducing some of the textiles, iron work, lacquer, enamels, furniture, etc., etc., exhibited in that Museum. The plates will be especially useful not only to those studying the history of art but for those interested in ornament and design in their application to every day life, while they are bound to give pleasure to many for mere harmony of color and beauty of line.

The use of the Library by an unusual number of art students of late leads to the hope that the collection of books on the Fine Arts is becoming more and more helpful to the public.

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An exhaustive two volume French-English dictionary by A. Hatzfeld, A. Darmesteter and A. Thomas has been added to the reference shelves.

We note that Museum Libraries in this country are beginning to issue lists of books, the Cincinnati Museum Library having recently issued a brief list on architecture and another on sculpture of Classic Art. Museum Libraries, of necessity highly specialized, would, from their very nature, seem peculiarly fitted to contribute to the bibliography of their subjects.

Through the courtesy of the Connecticut Academy of Sciences the Library is in receipt of volumes five to nine of its transactions. These make our set complete with the exception of the first four volumes. The completion of our broken sets is an ever present consideration.

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MUSEUMS
OF THE
Brooklyn Institute of Arts and Sciences.

CENTRAL MUSEUM.
Eastern Parkway and Washington Avenue.

Open from 9 A. M. to 6 P. M., Monday to Saturday (inclusive). Thursday evening, from 7.30 to 9.45. Sunday afternoon, from 2 to 6.

The Museum is free to the public, except on Mondays and Tuesdays when the admission is 25 cents to adults and 10 cents to children under 16 years.

CHILDREN'S MUSEUM.
Bedford Park, Brooklyn Avenue.

Open free to the public from Monday to Saturday (inclusive) from 9 A. M. to 5.30 P. M., and on Sunday from 2 until 5.30 P. M.

MUSEUMS' STAFF.

FREDERIC A. LUCAS, - - - - - CURATOR-IN-CHIEF.

CENTRAL MUSEUM.

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Curator, Department of Fine Arts, - -	WM. H. GOODYEAR.
Assistant Curator, Department of Fine Arts,	A. D. SAVAGE.
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Chief Taxidermist, - - - - -	J. WM. CRITCHLEY.
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CHILDREN'S. MUSEUM.

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Assistant Curator, - - - - -	MARY D. LEE.
Assistant Curator, - - - - -	GEORGE P. ENGELHARDT.
Librarian, - - - - - -	MIRIAM S. DRAPER.

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The Children's Museum.

Bedford Park.

SOME EVIDENCES OF PROGRESS IN 1908.

As we go to press the Children's Museum rejoices in a year of growth and increased usefulness unequalled in any previous twelve months of its history.

A tabulated statement concerning our record is interesting at this time:

	General attendance.	Attendance at lectures.	No. of visits from teachers.	No. of specimens loaned to schools.
1908	114,418	22,056	895	500
1907	97,805	19,039	699	128

Comparing the statistics for 1907 and 1908 we find an increase of 16,613 in general attendance, that 3,017 more children came to the lectures in 1908, that 196 more teachers have used the Museum, and that the demand for loan material for schools has increased four fold.

Granting that this attendance is a measure of public interest and remembering that all attendance is voluntary, we have every reason to believe, that the general public, and the children in particular, are finding their Museum of very real interest and value.

A gratifying characteristic of the work for the year 1908, has been found in the greater intensity of interest manifested in every department. The boys and girls with specific questions to ask and with the knowledge of where to go for information, became more conspicuous as the work expands. Note books, pads, and pencils are becoming more generally used in the exhibition rooms because teachers more and more are sending their pupils to see what they can find at the Museum. One boy told us not long ago that he had not missed a lecture on "Electricity" for more than a year. Other pupils have attended eight and ten successive lectures without missing, while a great many children come to the Museum day in and day out for months at a time.

Teachers who are thoughtfully studying the influence of the Museum upon their own pupils speak of its quickening power in stirring into expression and action, pupils that appeared to be uninterested in any classroom work. One teacher only a few days ago said, "This is a most

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wonderful place for bringing out what is in children—some of these boys have never shown the slightest interest in their studies at school, but in the presence of these objects they blossom right out and talk about them with pleasure and enthusiasm."

One of the very impressive results of the year's work with the children has been the growing sense of appreciation of helpful surroundings. This appreciation has found expression in the general good behavior of all visitors. In former years we were occasionally annoyed with visits from boys who were noisy and often rough and ill behaved. For many months it was also necessary to watch the "line" while children were waiting for admission to the lecture room, but as the Museum has improved its collections, and as it has multiplied its centres of interests so that there is plenty for the child to see and do from the moment he enters the door, the question of discipline has been almost forgotten. On only two occasions, since January 1st, 1908, have we found it necessary to ask children to leave the building for bad conduct, despite the fact that at times the halls, lecture room, and exhibition rooms have been densely crowded with visitors, entering at the rate of two or three hundred an hour.

The demand for museum publications grows as the usefulness of the Museum becomes more thoroughly understood. Many children call at the museum at the beginning of each month to obtain schedules of lectures and lists of loan material. These they take to their teachers requesting that the lecture schedule may be posted in the school room, and that the teacher arrange to borrow specimens from the Museum to add interest to the class work. In this way the children are becoming our best advertising agents among teachers in the public schools, through the convincing proof they carry of benefits received from their Museum visits.

The Children's Museum Library, with the Museum, has grown in popularity and influence. The total number of readers for 1908 was 38,411; a gain of 4,900 over 1907.

Teachers are gradually depending upon the Library more and more for help in preparing lessons and for poems and other material for special exercises. Large numbers of boys and girls bring reference questions and much independent and consecutive reading towards definite ends is followed out.

The question of creating and maintaining interest in Children's Museum work has long since been settled. We have the children in great numbers, and they are eager to use the Museum in every department, but floor space is inelastic and museum contents cannot be compressed beyond that certain point which we have long since reached.

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While our lecture room, library and exhibition rooms are filled to overflowing with children, while our offices are crowded, and we haven't enough of them to accommodate the members of our staff, while there are no work rooms except the store rooms already filled, we are receiving inquiries about the Nature Study Club, requests for a resumption of the City History Club work, requests for more sittings in the lecture room, and enlarged laboratory privileges.

Nothing can ever satisfy our pressing needs except a fine new building, planned and built for the special work that has grown so rapidly and has become so generally recognized as worthy of generous support.

NOTES.

At a joint meeting of the School Garden Association and the New York Branch of the American Nature Study Society, held in Public School No. 165, Manhattan, December 4th, Miss Gallup represented the Children's Museum and gave a short description of the work with the Public Schools. About sixty teachers from the High Schools and Grammar Schools of Greater New York were present, and it was a pleasure to find that a large number of these were already familiar with some branch of our work.

We were glad to welcome among other museum directors and curators who have visited us within the past two months, two representatives who came to study our methods of work on account of their own work for children. Mrs. Agnes L. Roesler, of the American Museum of Natural History, took a list of charts that we lend to schools, and made other observations preparatory to the formation of more definite plans for a Children's Room which she is working to secure for the American Museum.

Miss Agnes L. Pollard, of the Staten Island Association of Arts and Sciences, is giving a course of lectures to children in the Museum rooms at Borough Hall, Staten Island, and found some of our charts of use in connection with that work.

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STINGLESS BEES.

With the exhibit on Bee Culture have been placed two nests of stingless bees together with specimens of the insect builders, a gift of Mr. Englehardt, who collected them in Guatemala.

Stingless bees occur in most of the tropical parts of the world and many species, differing greatly in size, are represented in Central America; some being as large or even larger than the hive bee, while others popularly called "Mosquito bees," are much smaller than our common house fly.

Their nests are built in hollow trees, in walls or under ground and are made of wax or a mixture of clay and resin. Each community consists of an immense number of individuals, but it is still doubtful whether these are the product of a single queen, as in the case of the hive bee, or several; nor has it been thoroughly ascertained whether swarms are sent off in starting a new colony. The nests are more like those of the bumble bee than anything else. The central breeding chambers, a layer of flat combs with cells on one side only, are encased by a labyrinth of passages with round elongated receptacles on the outside. In these the honey and pollen are stored, the feeding and breeding thus being kept entirely distinct. An outer wall, made of a tough resin-like substance serves as protection, and the entrance is gained by a narrow tube of wax, at the mouth of which sentinels are stationed to keep away intruders.

The honey pots may be as small as hazel nuts or as large as walnuts, according to the size of the bees, and as much as half a gallon of honey has been gathered from a single colony at a time. Though sweet it is inferior in quality to that of the hive bee and it is not much eaten except by the natives.

Attempts have been made to introduce stingless bees in the United States, not for the purpose of utilizing their honey, but on account of their value as pollen gatherers. While in this capacity they would be important allies to the agriculturist in the cross pollination of flowers and in increasing the fruit supply, all attempts to introduce them have failed for the bees cannot survive our cold winters.

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During the last five months, two young men, Frank Hart and Alma LeRay, who are interested in Wireless Telegraphy, have spent days and evenings planning, constructing and testing new pieces of apparatus, and have finally succeeded in installing a neat and efficient station at the Museum. They began by erecting a new mast and antenna. The mast, which is 60 feet high, is braced to the roof of the building, 40 feet above the ground, giving the antenna a height of 100 feet. The antenna consists of three heavily insulated copper wires, each 700 feet long and 3½ feet apart. The young men also worked out a new idea of leading the end of the antenna wire into the operating room by passing it through the centre of the window pane. This has proved highly successful under all weather conditions.

Careful attention has been given to the construction and arrangement of new tuning coils, adjustable condensers, jiggers, and other pieces of apparatus. New operating tables and a marbleized slate switch board add much to the appearance of the station, which is open to the public every week day from 9.00 A. M. until 5.30 P. M.

We wish to thank Mr. George Francis Dow, Secretary of the Essex Institute in Salem, Massachusetts, for a set of photographs of rooms decorated and furnished as a part of the historical exhibit at Essex Institute. Such a parlor, bedroom and kitchen might have been found in the homes of well-to-do sea captains of the Eighteenth Century.

The mahogany furniture of the parlor and bedroom are of beautiful design and finish, and the kitchen of the period—a half a century earlier, is made especially interesting with its array of utensils around the fireplace, the brick oven and above the mantel piece. These photographs are of great interest to us and to our visitors in supplementing our miniature colonial groups.

We have added about two hundred zoological, botanical and geographical charts to our loan collection. These are ready for distribution and teachers are invited to inspect them. A list will be printed in the February issue of the News.

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CITY HISTORY CLUB.

A club for the study of City History will resume its meetings at the Museum on January 4th, under the direction of Mr. Howard C. Green, instructor in the English Department of the College of the City of New York. Mr. Green has been a student of city history and a teacher of City History Clubs for the past ten years. Many of his pupils are now conducting City History classes of their own.

The Club at the Museum is to be supported by the Colonial Daughters of the 17th Century, of which Mrs. J. O. Carpenter is the President.

Boys and girls in and above the 6-A grade are eligible for membership, but not more than twenty members can be admitted.

The meetings will be held on Mondays at 4.30 P. M.

Three years ago, when the regular course of Physics lectures was begun, an informal class was held twice a week, during the winter, for experimental purposes. The boys were allowed to bring their own materials and under direction, construct various pieces of apparatus. They were also allowed to experiment with some of the Museum equipment and to familiarize themselves with apparatus which they were unable to acquire.

On account of the increasing demand for special lectures and the overcrowding of all the rooms, it was necessary, last year, to discontinue these experimental classes. This year we have had many requests for opportunities to "learn something about electricity." Several boys unable to purchase apparatus for themselves, have come to the office, saying that they have read many of the electrical books in the library and "wish to see if what they say is true."

As a rule, when these requests are made, the lecture room is in use, four or five boys are experimenting on wireless telegraphy in the only available office, and we can only give words of encouragement and an invitation to come again soon when we *may* have space to receive visitors.

We wish to thank Mr. Frank M. Woodruff of the Chicago Academy of Sciences for presenting us with some beautiful lantern slides of a monkey, jaguar and the nest of a bronzed grackle. The photographs were taken from life and we shall have many and repeated uses for the lantern slides.

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LIBRARY NOTES.

In accordance with its custom of preparing picture bulletins appropriate to each season and its special anniversaries, the Library made ready a series of Christmas bulletins, furnished with lists of books and poems. Quotations from several poems such as Milton's "Hymn on the Nativity" and Eugene Field's "Why do Bells for Christmas Ring" gave an added meaning to the pictures. The large number of poems copied by children and teachers proved that our selection was of interest and value.

The ter-centenary of the birth of a great Poet and "Apostle of Liberty" was noted by placing upon the walls of the Library some pictures of John Milton, one of which representing him as a boy of twelve years was especially admired by the children.

The section devoted to the "Christmas Bookshelf" was a favorite corner for the children during the month, and was of service to many parents. Individual mothers came to take note of some of the recent books, and by special request the President of one Mothers' Club was given suggestions not only in regard to books in our own field, but also was furnished with a list of desirable stories for young children not included in this special Library. There are many inquiries for the best books upon Natural History for children.

Through the courtesy of several publishers, a limited number of holiday lists of books were distributed to those to whom they would be of service.

A recent attractive book for children upon famous artists and their work, is entitled "Pictures Every Child Should Know," while for younger children, "The Art-Literature Readers" have a happy combination of reproductions of famous pictures, and poems from the best authors.

In the field of Nature books, there is no lack of well illustrated and interesting books. For example, Mr. Herbert K. Job writes enthusiastically of "The Sport of Bird Study" and furnishes many excellent photographs from life, while Charles G. D. Roberts tells many interesting stories of beavers and other animals in his recent "House in the Water." For younger readers, there are the "strange, true" "Insect Stories" by Vernon L. Kellogg, the very attractive "Fairy-Land of Living Things" by Richard Kearton, and "The Seashore Shown to the Children" with text by Theodore Wood.

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LECTURE SCHEDULE
AT THE CHILDREN'S MUSEUM.

Grades 7A and 7B: Tuesdays at 4:00 P. M.

Heat.
(Continued).

January 5th, The Effects of Heat.
January 12th, How Thermometers Are Made and Used.
January 19th, Latent Heat.
January 26th, Steam Engines. **Miss Lee**

Grades 5A and 5B: Wednesdays at 4:00 P. M.

Our Southern Neighbors.

January 6th, A Trip Through Mexico.
January 13th, Mexico (Continued.)
January 20th, Central America.
January 27th, Panama. **Miss Lee**

Grades 8A and 8B: Thursdays at 4:00 P. M.

Electricity.

January 7th, How to Make and Use Cells.
January 14th, The Effects of an Electrical Current.
January 21st, How to Measure an Electric Current.
January 28th, Electro-magnetism. **Miss Lee**

Grades 6A and 6B: Fridays at 4:00 P. M.

Astronomy.

January 8th, The Sun.
January 15th, The Moon and How It Causes the Tides.
January 22nd, Eclipses of the Sun and Moon.
January 29th, The Earth as a Planet. **Miss Lee**

Primary Grades: Saturdays at 10:30 A. M.

Animal Life.

January 9th, How Animals Breathe.
January 16th, How Animals Capture Their Food.
January 23rd, How Animals Care for Their Young.
January 30th, How Animals Travel From Place to Place. **Miss Lee**

Primary Grades: Saturdays at 2.30 P. M.

Hoofed Animals of Africa.

January 2nd, Elephants.
January 9th, Rhinoceros.
January 16th, Hippopotamus.
January 23rd, Antelope.
January 30th, Camel. **Miss Gallup**

THE LECTURES ARE FREE TO THE PUBLIC.

Special lectures may be arranged for.—Apply to MISS ANNA B. GALLUP.

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THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES.

The Museum News

Central Museum, Eastern Parkway
Children's Museum, Bedford Park

VOL. 4 BROOKLYN, N. Y., FEBRUARY, 1909. NO. 5

THE PAST YEAR.

The year that has just closed has been one of the most important in the history of the Central and Children's Museums, both in the matter of attendance and in work accomplished. The attendance at the Central Museum was 203,940, an increase of 35,255 over 1907, and at the Children's Museum 117,182, a gain of 19,377 over that for 1907, and a combined total of 321,122. So far as attendance goes, these figures represent high water mark in the history of the Museums. Mere gain in attendance, however, gratifying though it may be, is by no means the greatest gain during the year, for notable additions have been made to every department of the Museum as noted from time to time in the News.

Above all great progress has been made in the arrangement of the collections and as a museum is a place, above all others, where law and order should reign, this may be considered as the greatest gain of the year. Such an advance in arrangement has been the removal of the porcelains from the west square gallery and their installation in the east wing; the removal of the invertebrate collections from the west to the east hall; the transferrence of the herbarium from the second floor to the basement and its installation in smaller, better and more accessible cases.

Another long step forward is the construction of offices in the basement of the east wing and the removal of the library to new and commodious quarters where it is accessible not only to the staff but to the public. All this and many similar improvements in arranging the collections and making them available for the public are the natural outcome of the growth of the Museum and not the result of any special effort during 1908.

During the first period of the existence of a museum whose material is accumulating faster than quarters can be provided for it, there is of necessity more or less confusion. With sufficient room and a sufficient staff, it becomes possible to bring order out of the confusion.

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This Museum is now in the beginning of the second stage, but a large amount of work must be done in classifying and cataloguing specimens before the collections can be said to be in order. This calls for an increased force to do the work, but more pressing needs are cases for the display of specimens still in storage, book stacks for the library, and storage cases for birds, insects, and botanical specimens.

GAMES OF THE CLIFF DWELLERS.

The remains of the implements used in their games serve to connect the culture of the Cliff Dwellers with that of existing tribes.

Chance games are chiefly represented by stick dice, two-faced lots, and small flat wood, cane and bone dice, the last identical with those discovered in ruins at various places in the Southwest. An unique set of painted wooden billets in the Museum collection were probably used in a hiding game. No precisely similar gaming implements exist in use, but from their form and the marks on these sticks, it is probable they were concealed under a basket and their position with reference to each other guessed at.

The principal athletic game of the Cliff Dwellers, judging from the numerous kicking billets found in the ruins, is likely to have been the kicked-billet race. The billets are sometimes painted, but usually plain, and distinguished by notches and longitudinal marks. No buckskin balls are found, but hooped-shaped billets and sticks for tossing them, such as were discovered in great number at the Pueblo Bonito, occur. They are so nearly like the implements used in the widely distributed game of "double ball," that it seems probable that they were used in the same way. Netted rings, corncob feather darts, and corn husk shuttlecocks are also discovered in the ruins, but whether they were used in games, or in ceremonies akin to them, cannot be decided with our present knowledge.

SCRIMSHAW WORK.

The words Scrimshaw and Scrimshawing are probably unknown to most, perhaps all, of the readers of the News and yet they are, or were, used by thousands of English-speaking people and are very properly defined in the Century Dictionary. The variant scrimshander occurs in some books on whaling published about 1850.

Scrimshawing, broadly speaking, is a sailor's term for carving, engraving or inlaying; in a more restricted sense it is engraving on wood, or bone or ivory. The material most frequently used was the ivory of the sperm whale, whose teeth in the palmy days of the whale fishery were easily obtainable, of convenient size to be handled and sufficiently soft

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to be readily worked. The teeth were filed and scraped smooth, the design drawn and then the lines scratched in with knife, or usually the sharp point of a sail needle. Ships and female figures often with the addition of a trophy of flags were favorite designs. This work was almost entirely confined to whaleships when it was prosecuted during leisure hours, on Sundays and the morning watch below. Now-a-days the sailor rarely has any leisure hours and his commandment reads:

Six days shall you labor
And do all that you are able,
And the seventh scrape the anchor
And pound the iron rust off the cable.

With the decline of the whale fishery the art of "scrimshawing" has practically come to an end and specimens are no longer to be seen in every saloon and boarding house along the water front.

Many of them have found their way into museums and our own has recently received a number of examples through the courtesy of Col. Woodward. These not only give a good idea of scrimshaw work, but to one who can read between the lines convey considerable information. For example, one of the oldest and simplest pieces bears rather an indifferent figure of a man-of-war marked "Essex" and in addition two figures in uniform. The Essex was the ill-fated frigate built at Salem in 1799, and in 1814 captured by the English at Valparaiso. She was then commanded by David G. Porter, father of Commodore Porter, and among her midshipmen was David G. Farragut, Admiral to be. That this was actually drawn for the Essex is the more probable from the fact that the figures show a pennant at the main and the forked flag of a commodore at the fore, details that no man-of-warsman would omit any more than he would put the union jack on a man-of-war under sail. This picture must have been made not far from 1812, possibly by some whaleman in the Pacific where the Essex went to capture the British whalers near the Galapagos Islands, whither they resorted to get the great tortoises with which these islands then abounded. Another elaborately engraved tooth has as part of its decoration a steamer, which from its character and rig can be no other than the Kearsarge which sank the Confederate cruiser Alabama, and many years after was wrecked on a reef in the Caribbean Sea. The term engraved, applied to this tooth seems to be correct, for it differs in technique (as an art critic would say) from the scratches made by a sail needle. Two teeth depicting on one side a brig and on the other a lighthouse, the one in moderate weather, the other in a gale, may have been drawn with Minot's Ledge light in mind, or they may be purely works of the imagination.

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A single tooth bears two female portraits, treated as miniatures, and still another two figures typifying Hope and Abundance, and these are of interest as showing whence the sailor man went for his costumes. Those familiar with scrimshawing and tattooing and also unfortunately old enough to remember Peterson's and Harper's Magazines of fifty years ago, know that it was from these journals, particularly the back pages of Harper's, that the sailor drew the details of his costumes and will recognize their influence in the dress of these figures. It would probably be possible for an expert on dress to give the approximate date at which these teeth were graven.

A detail in the drawing of the anchor on which the somewhat melancholy Hope is leaning suggests that it must have been drawn rather early in the 19th century. The arms of the anchor are drawn straight and curved arms were only introduced about 1807, having been devised by Mr. Pering to lessen the breakages caused by the employment of a straight arm. Still this detail may have been an accident due to ease in drawing, though in another Hope the anchor is drawn with curved flukes. This last figure is one of two forming the reverse of two teeth showing a frigate under full sail and running before a gale. These two are examples of the very finest scrimshaw work and were probably made between 1850 and 1860, before sailing frigates were replaced by steamers. The schooners and brigs on the sides of the teeth appear to have been taken from R. H. Dana's "Seaman's Friend," a book published in 1841, and still in vogue in the 60's.

MENANDER.

A recent addition to the casts from the Antique, of the Art Department, is the seated Menander of the Vatican. It is a gift from the Hon. Elijah R. Kennedy. The marble original is an authentic portrait of the Greek dramatist, who died in 291 B. C., at the age of fifty-two. Although the exact date of execution and the original location are unknown, the statue is recognized as an original work of Greek Art, not far removed in date from the lifetime of the dramatist. The statue appears to have been discovered in or near Rome and to have stood for several centuries during the Middle Ages in the church of S. Lorenzo in Panisperna on the Viminal Hill. It was removed by Pope Sextus V (1585-1590) to his Villa Montalto, now Grazioli, and was acquired by Pope Pius VI (1775-1800), for the Vatican. The restorations are unimportant, concerning only the left hand with the scroll, the end of the nose, and part of the right foot. The statue is widely known as one of the most interesting and important works of Greek portrait sculpture. These are far from

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being numerous and those which are now extant are confined to the Alexandrian, or Hellenistic, period.

ON RECENT OBSERVATIONS OF THE WIDENING REFINEMENT IN AMIENS CATHEDRAL.*

Under the term widening refinement is understood a hitherto unnoticed, but widespread system of mediæval church and cathedral construction in which the vertical lines of the nave diverge in the upward direction. The announcement of such a system of intentional construction has been met by the denial of its existence on the part of many distinguished experts, especially in France. Such experts presume the facts to exist, but attribute them to accident, and more especially and exactly to accidents caused by the thrust of the nave vaulting.

The proofs of an intentional construction are, however, many and serious. They are presumed by Mr. Goodyear to be conclusive, and have been so recognized by the architect in charge of repairs in Rheims Cathedral, by the master-mason of the same repairs, by the architect in charge of the repairs of Amiens Cathedral, and by many distinguished experts in construction, among whom may be mentioned Prof. A. D. F. Hamlin, of the Columbia University Architectural School.

The monuments examined, and supposed to offer these conclusive proofs, include a large number in Italy, a large number in Northern France and other churches in Constantinople. The demonstrations from these buildings are universally and without exception submitted in the form of enlarged photographs which are, or will be, exhibited in the Museum of the Brooklyn Institute of Arts and Sciences. These photographs are presumed not only to illustrate the facts of widening, which they undoubtedly do, but they are also presumed to offer such a choice of facts as to negative the theory of accident.

The widening refinement includes many cases of widening in straight lines and these cases are more easily shown to be constructive than those in which the widening occurs in vertical curves.

The demonstration of the present Paper does not debate the vertical curves. It is confined to the cases of widening in straight lines.

There are two phases of widening in straight lines, piers which incline outwards from the pavement up, and piers which are perpendicular to the capitals; with vaulting-shafts which diverge in straight lines, beginning at the capitals.

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*Synopsis of paper read by Wm. H. Goodyear at the Toronto meeting of the Archæological Institute of America, December 29, 1908.

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To the former class belong, among other churches,
Saint Alpin at Chalons,
Saint Loup at Chalons,
Saint Ouen at Rouen and
The Cathedral of Rouen.
To the latter class belong, among other churches,
The Cathedral of Rheims,
The Cathedral of Amiens,
The Cathedral of Laon, and
Saint Remi at Rheims.

If the widening refinement were due to thrust, in the case of churches with piers which lean out from the pavement up or with shafts which lean out directly above the capitals the lines would bend or curve above the counter thrust and weight of the side aisles. Since resistance to the nave thrust decreases in the upward direction, accidental widening in straight lines against the weight and counter thrust of the side aisles is not to be assumed as likely or possible even in a single instance. The possibility of a subsidence of the exterior lower walls of the churches appears to be the only one which even in theory could explain an accidental widening of the kind described and observed.

If such subsidence had taken place at Rheims or at Amiens it would be known to the experts in charge of repairs.

Constructive stability is not endangered by the system discussed. At Amiens the lean outward is less than one-seventh of the diameter of the pier, and at Rheims the piers are far heavier than at Amiens, whereas the maximum inclination is the same.

It seems probable that the counteraction of an optical narrowing in, or spindling effect, due to perspective convergence, may have been one purpose of the widening refinement. But it seems also probable that this refinement is the expression of a positive artistic preference, based on experience and on good taste, for a diverging effect in the vertical supports of an arch.

The preference, or liking, on the part of Arab builders, for the horse-shoe form in arches, may be a related fact and there is an undeniable relation to the effect of the horse-shoe arch in this construction, but without that inward bend at the base which, to some, is a disagreeable feature.

The widening refinement dates to the 6th century at Constantinople and it disappears with the overthrow of the Gothic style by the Renaissance, in the 16th century. This overthrow was so complete that even the existence of the refinement has been forgotten.

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MIMICRY: PROTECTIVE COLORATION.

Those who had the pleasure of hearing Professor Poulton's recent lectures may be glad to know that many of the examples of mimicry or protective coloration mentioned by him are on exhibition at the Museum. Those who may wish to pursue the subject farther will find the following books in the library:

Beddard, F. E.,
Animal Coloration. 1892.
Also contains a chapter on Protective Mimicry.

Folsom, J. W.,
Entomology with Reference to its Biological and Economic Aspects. 1906.
Contains chapters on Mimicry and Protective Coloration and bibliography of the subject.

Kolbe, H. J.,
Einführung in die Kenntnis der Insekten. 1893.

Morgan, T. H.,
Evolution and Adaptation. 1903.

Nutting, C. C.,
Color of Deep-Sea Animals. Pamphlet.

Poulton, E. B.,
Colors of Animals; their Meaning and Use, Especially Considered in the Case of Insects. 1890.
Contains a chapter on Protective Mimicry.
Accounts of a number of Prof. Poulton's experiments are contained in the Transactions of the London Entomological Society.
Essays on Evolution, 1889-1907. 1908.

Schaeffer, Carl,
How Insects are Protected.
(See MUSEUM NEWS, May, 1906, pp. 141-143.)

Thayer, A. H.,
The Law which Underlies Protective Coloration. (See Smithsonian Institution. Annual report, 1897, pp. 477-482.)

Thayer, G. H.,
Concealing Coloration of Animals. (See *Century Magazine*, June, 1908.)

Wallace, A. R.,
Warning Coloration and Mimicry. (See his Darwinism.)

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LIBRARY NOTES.

The Library is frequently called upon for books on insects as carriers of disease. This demand it is well equipped to supply, having made a special effort to collect books and other publications on the subject, following the Museum exhibition work along this line. Four reports on Plague Investigations in India, just received, are a valuable contribution to this subject.

A work that has proved most useful for reference is the Portrait Index, which is an index to portraits contained in books and periodicals. The volume was made possible by the co-operative labor, covering nine years, of several institutions, edited by and at the expense of the American Library Association and published by the Library of Congress.

A full set of the publications of the Carnegie Institution will be found on the shelves of the Library. This apropos of a question that has been asked two or three times by 'phone of late.

Among recent accessions are Bond's "Screens and Galleries in English Churches," British Museum "Catalogue of the Lizards," v. 3, Budge's "Easy Lessons in Egyptian Hieroglyphics, with Sign List," Winckelmann's "History of Art," 2 v., and the Index to the Bulletin of the Nuttall Ornithological Club and to its continuation the "Auk," 1876-1900.

We note that a movement is on foot for an informal round-table meeting of Museum librarians at the next American Library Association annual conference to be held early in the summer. This should be productive of good results, not the least of which will be the acquaintance with one another.

The Curator of Books paid short visits to the State Library at Albany and the Hart Memorial Library at Troy, N. Y., early in January.

The following extract (translation) from the will of Edmond de Goncourt shows one collector's point of view as to the disposition of his collections: "My wish is that my Drawings, my Prints, my Curiosities, my Books—in a word these things of art which have been the joy of my life—shall not be consigned to the cold tomb of a museum, and subjected to the stupid glance of the careless passer-by; but I require that they shall all be dispersed under the hammer of the auctioneer, so that the pleasure which the acquiring of each one of them has given me shall be given again, in each case, to some inheritor of my own tastes."

Had Monsieur de Goncourt lived at the present day, he might have found museums not "cold tombs," but very much alive in their appeal to the dilettanti as well as the masses.

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The Children's Museum.

Bedford Park.

We give below the third list of charts to be lent to schools. These lists have been published in separate form and sets of leaflets will be mailed to those who apply for them.

The charts here described have only very recently been mounted and catalogued. Each chart can be rolled for transportation.

Charts may be kept one month.

MAMMALS.

PRIMATES.

Apes and Monkeys
Chimpanzee.

HOOFED MAMMALS.

Cape Buffalo
Elephant
Cow
Donkey
Giraffe
Red Deer
Reindeer
African Rhinoceros
Hippopotamus
Pig
Goat
Sheep.

GNAWING MAMMALS.

Hare
Squirrel.

MISCELLANEOUS.

Kangaroo
Duck Billed Platypus
Flying Fox
Vampire Bat.

BIRDS.

PERCHING BIRDS.

Kingfisher.

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BIRDS OF PREY.

Golden Eagle
Owl.

WADING BIRDS.

Flamingo
Stork
Heron.

MISCELLANEOUS.

British Swimming Birds
Mallard Duck
Peacock
Domestic Fowl
Parrots
Pigeon
Raven.

FISH.

Familiar Round Fish
Familiar Flat Fish
Shark.

AMPHIBIA.

Frogs.

REPTILES.

Tortoise or Green Frog.

CRUSTACEA.

Crab and Lobster.

INSECTS.

Beetles.

BOTANY.

Grafting
The Pear twigs
Apple and Pear (pruning)
The Apple
Strawberry
Raspberry
Gooseberry
The Apple (pruning).

GEOGRAPHY.

The Tower of London
City of Edinburgh, 1897
Venice
Pyramids of Gizeh
Windsor Castle.

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HISTORIC CHARACTERS.

William Shakespeare
Sir Walter Raleigh
Sir Walter Scott
Duke of Wellington
Queen Victoria.

RACES OF MEN.

Patagonians
Chinese
North American Indians
The Hindu
The Australian Aborigines
A group of Africans.

THE SEASONS.

Spring
Summer
Autumn
Winter.

HUMAN PHYSIOLOGY.

Organs of Digestion and Circulation.

FAMILIAR SCENES.

A Life Boat
Steamships
Sailing Ship
Balloons
A Snow Scene
A Water Wheel
A Farm Yard
A Fishing Village
A Street Scene
Harvesting
The Wind Mill
Haymaking
A Railroad Station
The Fire Engine
The Post Office
The Seaside.

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NOTES.

The City History Club held its first meeting in the Club Room of this building, on January 4th, 1909. Twenty-four boys and girls registered for membership—nine of which were members of the club last year. Mr. Harold C. Green, the instructor in this work, gave a most interesting talk on the "Indian Villages of Manhattan Island," followed by a lesson on the topography of Greater New York, which included the study, by the children, of small maps distributed. Each child was given an outline map of Greater New York to color and fill in for the second meeting.

At a second meeting held on January 11th, members brought in drawings of their own make, showing plans of the city blocks in which they live. These drawings are to be inserted in the club note books, which, through the reports of lessons, pictures, records of original research and study of individual students, will represent the work done by the club. The officers elected at this meeting were:

President—FRANK BUCK.
Vice President—NELLIE DOYLE.
Secretary—ALMA KUSKE.
Treasurer—ERIC PAULSON.

"The Standard Union" of our city will publish regularly, in its column of future events, the lectures to be given at the Children's Museum. This item may be of interest to teachers and others wishing for information about lectures when they are not able to obtain a copy of our lecture schedule.

The Mothers' Club of the Kindergarten in Public School No. 59, with Miss Annie L. Eaton, the head kindergartner, visited our Museum on January 19th, for the first time. After listening to an illustrated talk on "The Nesting Habits of Birds," the mothers made a careful study of the Museum collections and the Library.

We are glad to note that previous meetings of this character have been followed by repeated visits from the mothers with their children and husbands.

SPECIAL LECTURE, GEORGE WASHINGTON.

Miss Lee will give a special lecture on George Washington on Washington's Birthday, Monday, February 22nd, at 10:00 and 11:00 A. M. and 2:00 and 3:00 P. M.

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ADDITIONS TO INSECT COLLECTION.

We have again received a fine lot of insects from our young friend, Austin M. Curtis, whose interest in this line of study has been mentioned in previous numbers of the MUSEUM NEWS. The material in hand represents, chiefly, butterflies, moths and wasps, all collected in Porto Rico, for on recent voyages, Austin could not land in Venezuela, where he has been so successful before, on account of quarantine restrictions.

A large series of the so-called "Bella Moth" is of especial interest as showing a remarkable color variation among the individuals, no two of which are alike. This moth is widely distributed, ranging from Canada southward into Central and South America and the West Indies. Though subject to great individual variation wherever it occurs, several distinct geographical races are recognized. An exhibit placed in the insect room well illustrates the subject.

Among the wasps are some of the large, handsome insects, known as "tarantula killers." These formidable creatures, Austin relates, were quite abundant, and the utmost care had to be exercised in capturing them.

Upon examination, all proved to be males, and therefore devoid of a sting. In mentioning this we do not, in any way, mean to reflect on Austin's ability as an entomologist, but on the contrary, wish to call attention to the protection afforded the harmless males in their close resemblance to the stinging females.

Many defenseless moths and flies resemble stinging wasps, thus furnishing some of the most striking examples of that phenomenon called "mimicry."

A group containing the nest of a bumble-bee (*Bombus fervidus*) has been added to the exhibit dealing with homes of social insects. The nest contains a large number of cells and is shown in an underground chamber partly filled with soft grasses and moss, collected by a family of mice which formerly dwelt there, such situations being the favorite abodes of these insects.

Bumble-bees do not occupy the same nest more than one season, for on the approach of winter all the members of a community die excepting a few fertilized females, which hibernate, each one starting a new colony in the spring.

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A temporary installation of the birth stones presented to this Museum by Mr. Julius Wodiska has enabled our visitors to enjoy these beautiful gems while they are waiting for the materials necessary to display them advantageously. Each birth stone is occupied by a label with the verse about that stone. The gem case is one of the cases to which children often return and where they linger in evident delight over the beauty of color and scintillations, and in thorough enjoyment of the verses which they read, copy and compare. The proportionate amount of sapolio and soapsuds expended upon the surrounding paint and glass proves the attractiveness of Mr. Wodiska's gift.

SPECIAL LECTURE, ABRAHAM LINCOLN.

A special lecture on Abraham Lincoln will be given by Miss Gallup on Friday, February 12th. The lecture will begin at 10:30 A. M., will be repeated at 2:30 P. M. and illustrated with colored lantern slides. This being the 100th anniversary of the birth of Abraham Lincoln, officers and other members of the City History Club will assist on that day.

We are very grateful to Mr. W. T. Bather for an artist proof from an engraving of Benjamin Franklin, made by Mr. Bather from a portrait painting of Franklin now in the Pennsylvania Academy of Fine Arts, Philadelphia. This portrait was painted from life in 1778 by Joseph Silfrede Duplessis, a French painter of high rank, and was exhibited in the Paris Salon in 1779. It is one of the most familiar types of Franklin's portraits from having been frequently engraved, and is known as the "fur collar portrait."

Owing to the rapidly increasing demand for admission to lectures on Washington and Lincoln, teachers with classes will find it more agreeable and convenient to attend the morning lectures, when there is more room in the Museum and in the lecture room, than in the afternoon.

Thirty-two school principals, heads of department and teachers met at our Museum on Monday, January 18th, at four o'clock. A short explanation of the equipment and methods of work with children was given and the loan material for schools was exhibited and explained. The remaining time was devoted to a study of the museum collections and the books in the library. Several of the teachers who have been in the habit of bringing classes to the Museum told of the help that it had been to them.

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LIBRARY NOTES.

The number of readers in the Children's Museum Library is steadily increasing, and the year 1908 was a "record" year in the Library. The total number for the year recently closed showed a gain of 7,593 over the previous year, each month in turn having a considerable increase over the corresponding month in 1907. According to our minutes, April and November, 1908, have been the two largest months thus far, the "record" day being February 22nd, 1908, when a total of 870 readers was noted.

Several new picture bulletins were prepared during the month of January, one subject, "Childhood," being illustrated for the first time. In one group, entitled "The Childhood of Some Famous People," were included among others, youthful pictures of Sir Isaac Newton, William Shakespeare, and John Milton. In another series of bulletins typical "Winter" scenes were displayed with appropriate quotations.

In connection with the work of the "City History Club" a bulletin was arranged containing many interesting scenes in old New York and Brooklyn, together with a selected reading list.

Some anniversaries occurring in January were noted by other simple bulletins; these included the centennial of the birth of Edgar Allan Poe, and the anniversary of the birth of Benjamin Franklin, whose bicentenary was observed three years ago.

Among the books for older students recently added to the Library may be mentioned one which was eagerly welcomed by botanists throughout the country, namely, "Gray's New Manual of Botany." This seventh edition of the standard manual has been rearranged and extensively revised by Drs. B. L. Robinson and M. L. Fernald of Harvard University.

Another helpful book entitled "Biology and its Makers" by William A. Locy, as its title suggests, is designed to make "readers acquainted with those men of noble purpose whose work has created the epochs of biological history."

An interesting treatment of the subject "Autumnal Leaves" is found in a volume by F. G. Heath, attractively illustrated by twelve colored plates.

A quaint little volume by Jacob Abbott, published in 1855, is entitled "How the Story Books are Made." In connection with the woodcuts of "Franklin's Press" the author states that "to get a full and complete idea of the progress of the last half-century, we must compare Franklin's press with one of the great power presses, by means of which almost all the prodigious printing operations of the present time are performed."

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LECTURE SCHEDULE
AT THE CHILDREN'S MUSEUM.

Grades 7A and 7B: Tuesdays at 4:00 P. M.

Mechanics of Liquids.

February 2 How and Why Liquids Transmit Pressure.
February 9 The Equilibrium of Liquids.
February 16 How and Why Bodies Float.
February 23 Pumps and Siphons. **Miss Lee**

Grades 5A and 5B: Wednesdays at 4:00 P. M.

Geography of Italy.

February 3 Sicily as It Was.
February 10 Naples and Vesuvius.
February 17 Cities in Northern Italy.
February 24 Cities in Central Italy. **Miss Lee**

Grades 8A and 8B: Thursdays at 4:00 P. M.

Electricity
(Continued).

February 4 The Telegraph.
February 11 Electric Bells.
February 18 Electromagnetic Induction.
February 25 How Induction Coils are Made and Used. **Miss Lee**

Grades 6A and 6B: Fridays at 4:00 P. M.

Astronomy
(Continued).

February 5 The Planets.
February 12 Holiday—(lecture by Miss Gallup).
February 19 Fixed Stars: What They Are.
February 26 Legends About Stars. **Miss Lee**

Special Lecture 10:30 A.M.
February 12 Abraham Lincoln. **Miss Gallup**

Primary Grades: Saturdays at 10:30 A. M.

The Human Body.

February 6 How and Why We Breathe.
February 13 The Blood and Its Circulation.
February 20 The Eye.
February 27 The Ear. **Miss Lee**

Primary Grades: Saturdays at 2.30 P. M.

Animals That Carry Burdens.

February 6 Camel.
February 13 Llama.
February 20 Horse.
February 27 Donkey. **Miss Gallup**

February 22 Special Lecture (Washington's Birthday).
10:00 and 11:00 A. M., and 2:00 and 3:00 P. M.
George Washington. **Miss Lee**

THE LECTURES ARE FREE TO THE PUBLIC.

Special lectures may be arranged for.—Apply to MISS ANNA B. GALLUP.

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THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES.

The Museum News

Central Museum, Eastern Parkway
Children's Museum, Bedford Park

VOL. 4 BROOKLYN, N. Y., MARCH, 1909. No. 6

THE GIFT OF A GAINSBOROUGH.

Mrs. Caroline C. Hoagland has recently presented a painting by Thomas Gainsborough (1727-1788), known as the Gypsy Encampment, canvas 44 x 36 inches.

Among the artists of the 18th Century English School there is none greater than Gainsborough. He surpassed the great Sir Joshua in versatility and in brilliancy of color and does not rank below him in the serious qualities of thought and purpose which pertain to real greatness in the painter's art as they do in other fields. The picture presented by Mrs. Hoagland is worthy of such an author and its history is well authenticated.

Mr. Algernon Graves, who is probably the best known compiler of reference works in London, mentions a mezzotint copy of this picture which was done in Gainsborough's lifetime and reproduced it in the work on Gainsborough which was published by his firm in 1875. The picture is also recorded as having been sold at Christie's in 1895, among other works of the Gainsborough Dupont sale. The Gypsy Encampment, so-called, represents a bold foreground landscape, with the figures of a young mother and nursing child, a boy carrying faggots, a youth stretched at full length and a reclining donkey. The coloring is rich, the tone mellow and the execution of the landscape is remarkably bold and powerful.

He was all his life a lover of nature. When a child he spent whole days in the woods and fields sketching trees and bits of the open country. Once he even forged his father's signature in order to escape from school to his beloved sketching. When he had pictures to sell, his landscapes were admired, his portraits bought. It is said that during the eighteen years that he exhibited in the Royal Academy, he sent only six landscapes, whereas, after his death there were fifty-six in the auction of his studio stock.

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THE LYRE TURTLE.

The great Leatherback or Lyre Turtle noted in the January News is a representative of the largest species of existing turtles and one that is the most exclusively marine in its habits. There is a direct connection between these two facts, for, as the bodies of animals living constantly in the water are supported by it, they are not subject to the same limitations of size and weight as are land animals. Hence, the largest species in any group are as a rule aquatic. Whales for example, are not only the largest of living mammals, but they are the largest animals that have ever existed, reaching a greater length and much greater weight than the huge Dinosaurs of which we hear so much. The largest of these monsters in turn are believed by many to have passed their entire lives in the water, or at best to have come on land only at rare intervals.

Following this rule the Lyre Turtle is the largest turtle we have now-a-days, although some of the great tortoises of the Galapagos and Aldabra Islands attain a weight of from 300 to 400 pounds.

Great as is the Leatherback, he was exceeded in size by a distant relative that during the Cretaceous Period inhabited the inland sea then extending from the Gulf of Mexico to the Rocky Mountains. This ancient turtle fitly named Archelon, the ruling turtle, had a total length of about 12 ft. the skull alone being 3 ft. long. However, a turtle the size of our specimen, something over six feet long, may well say with Kaa the Python, I *am* a good length.

We have waited several years for this turtle in full faith that sooner or later he would come, for every year a few specimens straggle from their home in the Gulf of Mexico and are brought northwards by the Gulf Stream to our coast between North Carolina and Massachusetts. At least, one has been taken on the shores of Maine and one we believe made the long trip to England.

This turtle is found in the warm seas of the globe, including the Mediterranean, and has been taken on the California coast. According to Dr. Gadow the species is dying out, and he notes the curious fact that moderate sized specimens of this turtle are rarely or never taken, all that come to hand being very small or very large. The smallest one we have seen weighed 240 pounds, but the average weight is between 700 and 800 pounds. The flesh is ill flavored and worthless, if not dangerous as food, and the turtle is of no economic importance.

FOR TEACHERS OF BIOLOGY.

Do the teachers of biology in our higher schools appreciate the value of the collections at the Central Museum and the opportunities they offer for supplementing the information given in text-books?

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Owing to the lack of many desirable specimens and the fact that it has not been possible to arrange the collections systematically, little has so far been said in the News in regard to the opportunities offered students, but as many portions of the Zoological collections are now fairly in order, it may be well to say something about them.

The collection of fishes is beginning to assume form and a glance at the alcove containing this exhibit gives something of an idea of their variety and of the different orders comprised in the term fishes. The batrachians being a small compact group, are in good shape, but the reptiles are perhaps more fully represented than any other group of vertebrates in the Museum and a glance at the specimens, especially if supplemented by a few remarks from an instructor, can hardly fail to give a good idea of the characters and structure of this great class. The rare and interesting Hatteria is present not only in a group comprising three specimens, but in the more important form of a skeleton. There are mounted specimens and skeletons of typical examples of Crocodiles, Snakes, Lizards and Turtles as well as exhibits illustrating the characters of the class in general and special points in their structure and habits.

The birds are at present unavoidably scattered but such a group as that of the Hoatzin is a great help to the understanding and appearance of the probable habits of the earliest birds. The mammals are in passable order and most of the higher groups from the monotremes to man are represented.

A small representative series of Mollusks has been on exhibition for the past two years; a fair series of Echinoderms has recently been installed and a commencement made of an exhibit of Crustaceans and still simpler forms.

The exhibits relating to evolution and preservation of species are of special value, as they show variation, protective coloration, mimicry and the effects of environment. This last factor is well shown by a series of cave animals. These are the factors that have influenced the development and distribution of living things and their importance may be the more readily appreciated from seeing the actual animals than from simply reading about them.

MUSEUM THEFTS.

The recent stealing of a painting from the Lenox Library leads us to note that most museums suffer from occasional thefts, varying in importance from paintings and other valuable works of art to small objects taken by the souvenir fiend. While the deliberate theft of any object in a museum is to be deplored, the more that it is a loss to the entire public,

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the taking of things for souvenirs, like the bites of mosquitoes, are particularly exasperating. Should a museum curator ever write an Inferno, he will undoubtedly devise a special circle with many and varied pains and penalties for the benefit of the perpetrators of such thefts. In the majority of cases the things taken are of little or no intrinsic value, yet their loss to the museum, or the injury done by taking a part of a specimen, may be literally irreparable. For example, at the United States National Museum some one stole the tip of the tail from the skeleton of the elephant and later on another thief helped himself to a toe from the same skeleton. Now these objects in themselves were not of the least value, but their abstraction spoiled the completeness of the skeleton and if the thieves had undergone the torments that the curator devoutly wished might befall them, flaying alive would, in comparison have seemed a mild and sudden death. We wonder if the objects taken are displayed and labelled "stolen from the National Museum."

So far as the Museum of the Brooklyn Institute is concerned, a chapter on Museum Thefts is somewhat like Bishop Pontoppidans' chapter on the Snakes of Norway, which is said to read, "there are no snakes in Norway." We can only say somewhat like, because there have been two or three books and other small articles taken from this museum. That it has suffered little speaks well for the Brooklyn public, and yet the one or two objects that have been stolen, while insignificant in themselves, will take much time and money to restore. It is not at all probable that this article will meet the eye of the individual who stole a brass ball from the arm of a Persian chair, but we wish it might if only that he could realize the trouble he has caused and the estimation in which he is held. The value of this ball, probably taken by some boy, would not be at the most more than $5, but to make a duplicate will cost many times that sum and even then it will not be the original, only a copy.

THE DARWIN CENTENARY.

Various scientific societies, among them the New York Academy of Sciences, have held meetings to commemorate the work of Darwin and his influence on the progress of science. In connection with this event, there has been temporarily installed at the American Museum of Natural History a series of exhibits illustrating Darwin's work on the origin of species, showing some of the animals studied by him, and calling attention to their special features on which he based some of his conclusions. The Museum of the Brooklyn Institute has contributed to this Darwin

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exhibit a series of insects illustrating vestigial and rudimentary structures; those that are passing out of existence and those that are coming into being, nascent structures, as Darwin most appropriately termed them. Also a number of domesticated fowls, a group to which Darwin paid much attention. One series of these illustrates variation under domestication, another reversion or a reappearance in animals of the original characters of their ancestors.

For these fowls, as well as others the Museum is indebted to Dr. Charles B. Davenport, Director of the Carnegie Station for experimental evolution, who is engaged in a series of careful experiments in the breeding of various animals, and its relation to the problems of evolution and heredity.

THE YELLOW RAIL ON LONG ISLAND.

A specimen of this small rail, a gift from Mr. Robert W. Peavey, having been recently mounted and placed on exhibition with the Birds of Long Island, the following notes relating to its occurrence on the Island may be of interest to our ornithological friends.

Giraud, in 1844 in his Birds of Long Island, says of this species, "seldom met with on Long Island," but he goes on to say that he considered it less rare than it was generally supposed to be and adds that its apparent scarcity might be attributed to its skulking habits and its frequenting the tall grasses of marsh districts.

In the Auk for July, 1885, Mr. Newbold T. Lawrence, reports having flushed a Yellow Rail in the meadows near Far Rockaway, October 15, 1883, and records another seen in October 1882. Mr. Dutcher in the same Journal in April, 1888, records a specimen taken at Oakdale, Suffolk County, April 29, 1887, and in July, 1893, makes record of two specimens in the collection of the Long Island Historical Society, that were shot by Colonel Pike on the meadows near Southampton, L. I., in 1848. The Brooklyn Museum specimen was collected by the donor at Seaford, L. I., September, 1908. Dr. Wm. C. Braislin in his recently published list of the Birds of Long Island, says: of this species, "Probably regular summer resident, though but rarely observed."

The distribution of the Yellow Rail includes Eastern North America from Nova Scotia and Hudson Bay west to Utah and Nevada, south to the Bermudas and Cuba.

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LIBRARY NOTES.

Apropos of the centenary of Charles Darwin (February 12, 1809-April 19, 1882), now being commemorated on every hand by public addresses and the printed page, a list of his principal works may be interesting.

"On the Origin of Species," published in November, 1859, was his great work. This embodied his theory of biological evolution called, "The Darwinian theory," which eventually changed the thought of the entire scientific world. He also wrote, "Narrative of the Surveying Voyages of H. M. S., Adventures and Beagle" (published as Vol. III, of the reports of Captains FitzRoy and King, 1839; second edition, "Journal of Researches into the Natural History and Geology of the Countries visited during the voyage of H.M. S. Beagle," 1845; third, "A Naturalist's Voyage," 1860), "Zoology of the Voyage of H. M. S. Beagle" (1840-43, edited by Darwin), "The Structure and Distribution of Coral Reefs" (first part of "The Geology of the Voyage of the Beagle," 1842), "Geological Observations on the Volcanic Islands visited, etc." second part of the "Geology, etc.," 1844), "Geological Observations on South America" (third part of the "Geology, etc.," 1846), "On the Various Contrivances by which Orchids are fertilized by Insects, etc." (1862), "The Movements and Habits of Climbing Plants" (1865), "The Variation of Animals and Plants under Domestication" (1868), "The Descent of Man, and Selection in Relation to Sex" (1871), "The Expression of the Emotions in Men and Animals" (1872), "Insectivorous Plants" (1875), "The Effects of Cross and Self Fertizilation in the Vegetable Kingdom" (1876), "Different Forms of Flowers" (1877), "The Power of Movement in Plants" (1880), "The Formation of Vegetable Mould through the action of Worms, with Observations on their Habits" (1881), and a number of monographs, etc.

For accounts of him and his work, the reader is referred to the following:

"The Life and Letters of Charles Darwin, including an autobiographical Chapter"; ed. by his son Francis Darwin, 3v.

"Charles Darwin: his life told in an autobiographical chapter, and in a selected series of his published letters"; ed. by his son Francis Darwin.

"Charles Darwin and the theory of natural selection." By E. B. Poulton.

"Life and Letters of Thomas Henry Huxley." By his son Leonard Huxley, 2v.

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"Essays on Evolution, 1889-1907," by E. B. Poulton, Hope Professor of Zoology in the University of Oxford, has been added to the Library. A review of the volume in Science for January 15, 1909, says: "Professor Poulton is well known as an ardent neo-Darwinian and as one who has made the subject of insect mimicry his own. * * * The latter part of the Huxley article and the remaining three essays are devoted to a consideration of the question of insect mimicry. They are the pièces de résistance of the whole volume, forming, as they do, the most thorough exposition of the significance of insect coloration we possess or are likely to possess until the fuller treatise promised by the author is published. In the abundance of illustrations cited and in the keen criticism to which the various cases are subjected the essays stand alone, and their usefulness is immensely increased by the addition of a list of the mimicking and mimicked forms referred to, and also by the most complete and thorough index to the entire volume that it has ever been the present reviewer's pleasure to use."

Teachers of biology will find many important books and monographs, not likely to be found in other Brooklyn libraries, on the shelves of the Museum Library.

Attention is called to an exceedingly good "Bibliography on Flies and Mosquitoes as Carriers of Disease," compiled by W. Paul Gerhard in the February number of the Entomological News.

Miss Van Hoevenberg, formerly librarian of the Ferguson Library at Stamford, Conn., now librarian of the Charleston, S. C., Museum, visited the Library before her departure for the South.

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LECTURES AT THE CENTRAL MUSEUM.

Mr. F. A. Lucas will give a series of three illustrated lectures on Elephants, Past and Present, beginning Saturday afternoon, March 13th. The dates and subjects will be as follows:

March 13, EXISTING ELEPHANTS.
Their species and distribution, habits and capture. Elephants in Art and History. The coming extermination of the elephant.

March 20, ELEPHANTS OF THE PAST.
The pedigree of the elephant family; its rise and decline.
The ancestors of modern elephants and some of their associates.

March 27, THE MAMMOTH AND MASTODON.
How they are distinguished from one another. The migrations of the mammoth; known to the cave men.
Preserved entire in Siberia.
The mastodon; its former abundance; notable specimens.
Was it contemporary with man?
The size of the mammoth and mastodon.

These lectures will begin at half past three o'clock, and are free to the public.

These will be followed by a series of six lectures by Prof. Charles L. Harrington, M. A., beginning April 3. This series will discuss the recent discoveries in electricity and chemistry in relation to the origin of nebulae and planets, and in explanation of the structure and life of the earth. Such subjects as "The Origin of Organic Life," "The Constitution of the Sun," "The Pressure of Light," "The Forms of Comets as they Approach the Sun," will be fully treated as far as they relate to the main subject.

The lectures will be given in a popular form suitable to the understanding of persons above the age of 15 or 16, and a full explanation of the working of apparatus used will be given.

These lectures will be given at 3 o'clock on consecutive Saturday afternoons.

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The Children's Museum.

Bedford Park.

SOME INTERESTING LETTERS.

A great many times the questions have been put to us, "Do the teachers take much interest in children's museum work?" "Do the children care for the Museum and do they remember what they see and hear?"

Such questions naturally occur to the casual observer, but to one who is regularly in the Museum, and to whom the faces of many teachers and children have become so familiar through oft repeated visits, the answer is very plain.

It is pleasing in this connection to take from our files, letters from teachers and students, which reflect in some degree the influence of the Museum.

We give below from among these letters two from school principals and two from college students showing, as they do, in what ways the Museum has been of use to them.

PUBLIC SCHOOL, NO.————

January 22, 1909.

MY DEAR MISS GALLUP:

It may interest you to know that of the 282 pupils present in the two highest grades (4A and 4B) this morning, 134 had been to the Children's Museum either last spring or this fall.

When you consider that most of these children live north of DeKalb Avenue, this indicates a great deal of interest on their part. They have gone of their own volition, without the escort of teachers. I found them well acquainted with many of the interesting features of the Museum.

We have not made as much use of the loan collection as I should like, because we have no large boys to send. However, I may be able to send part time teachers next term.

Assuring you of my interest in your work, and my appreciation of what you are doing for the children of Brooklyn, I am,

Cordially yours,

———————————

Principal.

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PUBLIC SCHOOL, NO.———

January 12, 1909

DEAR MADAM:

Our school made three efforts to use the Museum for special lectures —as three trips were necessary to secure the privilege for all of the children of our grade, owing to the limitations of the lecture room.

The children and teachers enjoyed the lectures and the attention received.

The use of your collections inspired our teachers to have one of their own in our school building. These specimens, with added ones from the Museum in Manhattan, have added much profitable interest in nature work. How I do wish you had a branch in our section! We would show what a bee-hive we could make of it for you.

Your work, however, deserves the credit for our inspiration, though we are so inconveniently placed for the use of your headquarters.

Cordially,

_____

Principal.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY,

Boston, Massachusetts,

January 23, 1909.

MY DEAR MISS LEE:

About one year ago I visited the Children's Museum and was greatly interested in the work done for and by the boys there. I spoke with you at the time about wireless telegraphy, being especially interested in that subject.

I have always had a keen interest in scientific matters. My wireless station in was the first in our section of New Jersey. Last year I was employed as a student instructor in the department of Physics and Chemistry at the High School. While there, the boys tagged me continually with questions and ideas. I became interested in the formation of a club and for about a year have been hammering at the school authorities of for recognition and active support of such an organization. They have promised me one room in one of the old buildings as soon as a new building is finished, in about a year. This will do for a start and I believe I can do better if I keep at them hard enough.

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I want to provide a reading room with the current amateur and scientific publications, and to gradually accumulate a library and a collection of natural and scientific objects for a museum. To provide a small laboratory where current and chemicals may be obtained and the boys may be guided in their experiments.

Also to provide illustrated lectures on popular scientific subjects in which the older fellows and parents will also be interested. These lectures can in most instances be given by engineers and scientists in our own town.

I think, if the parents become interested, we will receive many donations for books, apparatus, etc.

Now, before giving the society definite form, I should like to broaden my ideas and base them upon something. I am studying mechanical engineering here in Boston and am thus somewhat limited in undertaking the formation of such an organization.

Therefore, if it is not asking too much, if you will kindly, at your leisure, give me the aims of the organization you direct, tell me how it is supported and something about it, I would thoroughly appreciate your trouble and consider it a great favor.

Very truly,

Ithaca, N. Y.

MY DEAR MISS GALLUP:

You will remember me by our correspondence about owls, etc., as well as by former visits to the Museum, when I was in the city. It was a favorite resort then. Ever since, its work and progress have interested me, and by the bulletins which occasionally reach me, I see that they are ever increasing.

At present, I am a sophomore in Cornell University. This spring vacation I hope to spend in New York, and it is my intention to pay you a call and see how the Museum has grown in five years. Will you have time to explain some of its phases to me?

Very truly yours,

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NOTES.

One of our young visitors who was deeply impressed with the Eskimo group and other illustrative material for studying the Eskimo, asked recently if some of the ladies at the Museum had not "once lived at the North Pole"—some such theory was the only satisfactory explanation for the accumulated knowledge which apparently made its impression.

On the 26th of March a lecture will be given on Porto Rico by Miss Lee assisted by Mr. Austin Curtis. Mr. Curtis is one of the earliest patrons of the Museum, having first begun his visits nine years ago. He is now the wireless operator on a vessel which plies between New York and Porto Rico and Venezuela.

On account of the political trouble in Venezuela, the boats of this line go to Porto Rico only, where it is necessary to wait two weeks each trip for mail from points further south. These delays have given Mr. Curtis an opportunity to observe many of the customs of the people as well as the animals and plants of the island, and on the 26th of March he will tell some of his experiences.

The wireless station has been "out of commission" for the past few weeks, owing to the damage done by the very severe storm of January 17th. This is the first time, since the station was opened three years ago, that the pole has been injured, but as it was the worst storm for twenty years, and all telegraph and telephone companies suffered extensively, we should not complain.

A new pole will soon be erected, a detailed account of which will be given in the next issue of the News.

Mr. W. T. Bather has presented the Museum with an exceptionally beautiful artist proof portrait engraving of George Washington, copied from the original painting by Gilbert Stewart, in the Boston Museum of Fine Arts. The portrait is surrounded by an artistic conventional design, at the top of which the American Eagle perches on the Shield of the Union and two American flags. Below the portrait is a minature reproduction of "Washington Crossing the Delaware, 1776," from the familiar painting by E. Lentze, now in the Metropolitan Museum of Art, New York. This, like the Franklin portrait noted in the February News, constitutes a most acceptable addition to our History Collection, and we wish to emphasize our grateful thanks to Mr. Bather for his generosity.

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Lincoln's Birthday was one of the large days at the Children's Museum, despite the fact that the schools were open in the morning for special commemorative exercises, and a parade in the early afternoon engaged the attention of a great many children in the neighborhood. The attendance, however, was 1,409, the largest for that date and 278 in excess of 1908. The lecture was repeated six times and 726 children attended. Although our Museum was over-crowded for the entire afternoon and the congestion was trying to everybody, the children were all so well-behaved and orderly as to deserve a special compliment, for as usual on holidays, some of them stood patiently in line for one or two hours, waiting for admission to the lecture room.

An account of the successful method employed by one of the public school teachers in encouraging her pupils to use the Museum was enthusiastically related, by the teacher herself, during her visit to the Museum not long ago. This teacher began the work by coming to the Museum with the boys and girls until they had formed the habit of using the Museum for reference. Now she finds that the pupils come regularly of their own accord, but in order to perpetuate the interest—the last school period on Monday is reserved for an informal report, from different members of the class, of the visit to the Museum the previous Friday afternoon. During this period pupils give an account of the lecture, of any reference work with the collections, of the reading and note-taking in the library, and of any other matters that they have especially enjoyed.

In speaking of the success of the experiment, the teacher said, "My boys and girls can hardly wait for the last period on Mondays, and that period is always too short. The amount of detail that they remember often surprises me, and what they learn here is of great value to them in their other school work. I often overhear them talking among themselves about their visits and all through the week making appointments with one another for Friday afternoons."

We have added to the botanical collection wax models representing branches of the tea, coffee and cinnamon plants. The tea plant is in bud, the coffee plant in berry.

The attendance on Washington's Birthday was 1,952, the record for any one day in the history of the Museum. The lecture on George Washington was repeated seven times to accommodate 973 children, many of whom had attended the lecture in previous years. At 10:00 A. M. a line of 140 children had formed outside the lecture room door.

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The Museum has added to its historical collection a number of photographs of houses dating from the latter part of the seventeenth century. Some of these houses are of peculiar interest, because of the famous personages and events connected with them. But apart from this fact, they are interesting as illustrating the different types of architecture employed in the various sections of our country during that period.

It is believed that the old houses with the descriptions will attract and assist classes in United States History, for whose special benefit we list the photographs on exhibition.

LONG ISLAND.

House at Easthampton.
Windmill in Easthampton, Revolutionary Period.

NEW YORK.

Home of General Herkimer, Little Falls, 1764.
Old Dutch House, Montgomery, Orange County, 1763.
Old Huguenot House, New Platz, 1712.
Old Senate House, Kingston, 1676.

STATEN ISLAND.

The Billop House, 1776.

MASSACHUSETTS.

The Alden House, Duxbury.
The Standish House, Duxbury, 1666.
Harlow House, Plymouth, 1660.
Jones House, Concord.
Unitarian Church, Concord.
The Old Hunt House, Concord.
Wright Tavern, Concord.
Antiquarian House, Concord, 1775.
The Old Manse, Concord.
Col. James Barret's House, Concord.
The Old Adams Houses, Concord.
Meriam's Corner, Concord.
Old North Bridge, Concord.

PENNSYLVANIA.

First Moravian Seminary, Bethlehem, 1745.

VIRGINIA.

Home of Chancellor George Wyth, Williamsburg.

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LIBRARY NOTES.

The deep interest which has been aroused this year by the Centenary of the birth of our great "Martyr President" has been appreciably felt in the Library. For several weeks, there were daily inquiries for the "Gettysburg Address" and for stories and poems about Lincoln, which reached a high water mark on his birthday. Though the stories, poems, and the immortal address were desired in many cases for school exercises, there was an added reason, a genuine desire to know something about the character and life of this great-hearted man.

As one means towards this end, numerous pictures which had been gleaned from many sources, were arranged in attractive bulletins, and served to illustrate many incidents in Lincoln's public and private life.

The anniversary of the birthday of Washington always claims its share of the interest of children, and books and poems about him were desired as usual. Pictures and lists were also arranged, and thus suitable companion bulletins called the attention of readers to two great leaders, the "Father" and the "Savior" of our country.

During the month of February, the Library noted the centenary of the birth of two other great men, Darwin and Mendelssohn. Some very simple bulletins contained pictures of each, together with brief statements regarding their life and work. It is notable that the great naturalist was born upon the same day as our own Lincoln. As the Library contains many of Darwin's works, attention was called to the most notable of these, and to several books about him. Two books recently added to the Library contain interesting accounts of Mendelssohn; namely, Rowbotham's "Story Lives of Great Musicians" and Whitcomb's "Young People's Story of Music."

The many boys who consult our electrical books will welcome one of the latest and best books upon Wireless Telegraphy, written by C. C. F. Monckton, and also a most useful manual called "The Electrical Engineer's Pocketbook." The latter has been thoroughly revised during the past year, and the fifth edition contains much valuable data for practical workers.

The Library is again indebted to the Publishers of the Brooklyn Daily Eagle, for the gift of the "Eagle Almanac" for 1909. This useful handbook is in daily use, and we note among other new features some excellent maps, which for greater convenience in using are placed in a "pocket" provided for the purpose.

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LECTURE SCHEDULE
AT THE CHILDREN'S MUSEUM.

Grades 7A and 7B: Tuesdays at 4:00 P. M.

Mechanics of Gases.

March 2	Properties of Gases.	
March 9	Applications of Compressed Air.	
March 16	Atmospheric Pressure and the Barometer.	
March 23	Air Pumps: Exhausting and Condensing.	
March 30	Illuminating Gas: Its Preparation and Uses.	**Miss Lee**

Grades 5A and 5B: Wednesdays at 4:00 P. M.

Industries of the United States.

March 3	Coal Mining.	
March 10	Wheat Farming.	
March 17	Ranching.	
March 24	Forestry and Lumbering.	
March 31	Cotton.	**Miss Lee**

Grades 8A and 8B: Thursdays at 4:00 P. M.

Electricity.

March 4	Motors and Dynamos.	
March 11	Electric Cars.	
March 18	The Telephone.	
March 25	Electric Light.	**Miss Lee**

Grades 6A and 6B: Fridays at 4:00 P. M.

United States Possessions.

March 5	Honolulu.	
March 12	Industries of Hawaii.	
March 19	Life in the Philippines.	
March 26	Porto Rico.	**Miss Lee**

Primary Grades: Saturdays at 10:30 A. M.

Birds.

March 6	The Migration of Birds.	
March 13	Nest Building of Spring Birds.	
March 20	How the Birds Make Their Living.	
March 27	What Birds Do for Us.	**Miss Lee**

Primary Grades: Saturdays at 2:30 P. M.

Animals That Awake in March.

March 6	Frogs and Toads.	
March 13	Salamanders and Newts.	
March 20	Turtles.	
March 27	Snakes.	**Miss Gallup**

THE LECTURES ARE FREE TO THE PUBLIC.

Special lectures may be arranged for.—Apply to MISS ANNA B. GALLUP.

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THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES.

The Museum News

Central Museum, Eastern Parkway
Children's Museum, Bedford Park

VOL. 4 BROOKLYN, N. Y., APRIL, 1909. No. 7

We trust that the readers of the News may be content this month to take works in place of words. The past month has been unusually busy, as the completion of a few cases, for which we have long been waiting, has enabled many changes to be made in the exhibition halls. On the first floor the entire collection of glass and the Tanagra figurines have been placed in new cases, while the transfer has made it possible to put on exhibition the collection of vases, Rakka pottery and Egyptian objects so long in storage, owing to lack of cases in which to display them.

On the second floor the exhibits illustrating variation, protective coloration and various devices by which animals escape their enemies have been completely rearranged and preparations made for the removal of the minerals from the hall of vertebrates, where they have unavoidably been displayed for a long time.

We are frequently asked, "Are you busy at the Museum?" There is only one reply to this: We are *always* busy, but sometimes busier than usual. The past month has been one of these periods of great activity; two of the offices have been moved and work has been going on in six of the exhibition halls at once. The work of moving and making over of cases, rearranging material and preparing labels is not conducive to the preparation of copy.

In view of all that has been done, we trust the readers will excuse the small size of this number of the News.

THE QUESTION OF GROUPS.

Like all other questions, the question of the display of groups of animals may be regarded from various points of view. Years ago when the British Museum began its collection of British birds, groups were, so to speak, treated literally, that is, the exact surroundings of each nest displayed were noted and copied exactly. The recent beautiful groups installed by the American Museum of Natural History present the matter from another standpoint and are well termed "Habitat groups," since they show not merely a small section of ground containing the breeding birds, but give the beholder a good idea of the country and general conditions where these birds are found. Such groups as these can be properly executed by institutions having at their command considerable sums of

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money and a large and efficient corp of workers. The same may be said of the groups of deer in the Field Museum, which represent the very highest point attained in groups of mammals. Still another method is to select animals that are interesting in themselves or on account of their peculiar habits and show them in such manner that the animals are emphasized, while their surroundings are, so to speak, suggested rather than copied exactly. This is the plan that has been followed in the Museum of the Brooklyn Institute, where, partly by choice and partly by force of circumstances, the accessories have been subordinated to the animals, and while no section of country has been exactly reproduced, yet the birds and mammals have been displayed under the conditions in which they would be found in nature.

LIBRARY NOTES.

The following references to books in the Museum Library may be useful to those who attended the Museum lectures on Elephants given by Dr. F. A. Lucas, as well as to others who did not:

"Man as the Contemporary of the Mammoth and the Reindeer in Middle Europe"; by C. A. Alexander, translator.

"Guide to the Elephants in the British Museum (Natural History)."

"Frozen Mammoth in Siberia"; by O. F. Herz.

"Elephants"; by C. Knight.

"The Mammoth"; by F. A. Lucas.

"Truth about the Mammoth"; by F. A. Lucas.

"Evolution of the Elephant"; by R. S. Lull.

"Lenape Stone; or the Indian and the Mammoth"; by H. C. Mercer.

"Contribution to the Morphology of the Mammoth, *Elephas primigenius* Blumenbach; with an explanation of my attempt at a restoration"; by E. Pfizenmayer.

Several attractive illustrated guides to the British Museum (Natural History), models of their kind, have been received recently. These include Guides to the domesticated animals; specimens illustrating the races of mankind; exhibited series of insects; gallery of fishes; elephants; and specimens of the horse family.

The Library has recently received a copy of Professional Paper 60 of the U. S. Geological Survey, being "Interpretation of Topographic Maps," by Prof. Rollin D. Salisbury of the Chicago University, a well-known physical geographer, and Wallace W. Atwood of the Survey. A recent Brooklyn editorial said of this work: "It is a work, intended primarily for teachers and specialists, instructing them how to read and comprehend the maps which the Survey has been issuing for the last twenty-five years, until it has covered a good part of the United States, but which is also of much general value and interest. To this end, they have prefaced 170 selections from the maps, divided into thirteen groups, illustrating most effectively the forces, wind, waters, ice and 'volcanism,'

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which have made the United States physically what they are, and are still at the eternal, unending process. Preliminary text explains the plans of the maps, colors, lines, marks, arbitrary signs, etc., so that once familiar with the principles upon which they are made, the intelligent reader recognizes at once the history and characteristics of the region. The whole scheme has been thought out with extreme care and carried to a remarkable degree both of simplicity and refinement, so that only ordinary common sense and clear-headed attention are necessary to read into the maps the history, which the Survey reveals, and the exact topographical conditions which it has recorded * * *. Even to the ordinary citizen who merely wants to know the real truth about the country in which he lives, how and by what it was made, and the plain, literal facts about its physical features, no better preliminary course could be offered * * * while to the teacher of physical geography, who has either grasped his subject at all or has ambition to excel in it, no more instructive and effective aid could be found * * *. Brooklyn teachers, and pupils as well, will find much of interest in a double-page map, showing the geologic history and formations of the western end of the island and its division by the great terminal moraine, from Greenwood northeastward through Prospect Park, the Evergreens and Forest Grove to the city line."

With the coming of spring there is always an added interest in out-of-door matters, and in this connection a few practical references to publications in the Museum Library as to the care of trees may be of service to those desiring to inform themselves on the subject. The items marked * may be had by addressing the U. S. Department of Agriculture, Washington, D. C., free, or upon payment of a very small sum.

Connecticut Agricultural Experiment Station.
Protection of Shade Trees in Towns and Cities. (Bulletin No. 131.)

*Corbett, L. C.
Pruning. ("Farmers' Bulletin," No. 181.)

Des Cars.
Tree Pruning.

Felt, E. P.
Insects Affecting Park and Woodland Trees.

Fox, W. F.
Tree Planting on Streets and Highways.

*Haywood, J. K.
Insecticides and Fungicides. ("Farmers' Bulletin," No. 146.)

King, W.
The Soil Book.

Levison, J. J.
Hints on Pruning. (In "Brooklyn Eagle," March 1st, 1908.)
How to Destroy Tree Borers. (In "Gardeners' Chronicle of America," April 1, 1908.)

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Trees for Street Planting. (In "Brooklyn Eagle," Feb. 2nd, 1908.)
Why Poplar and Silver Maple Trees should not be Planted. (In "Brooklyn Eagle," March 8th, 1908.)

Massee, George.
Text Book of Plant Diseases.

Maynard, S. T.
Landscape Gardening as Applied to Home Decoration.

Pinchot, Gifford.
Primer of Forestry. ("Farmers' Bulletin," No. 173.)

Woods, A. F.
Principles of Pruning and Care of Wounds in Woody Plants. (In U. S. Department of Agriculture. Yearbook, 1895.)

A book recently published in New Zealand is of more than passing interest. It is "The Kea; a New Zealand Problem, including a full description of this very interesting bird, its habitat and ways, together with a discussion of the theories advanced to explain its sheep-killing propensities; By George R. Marriner." For half a century this New Zealand mountain parrot has been accused of being a sheep-killer. The writer says that for fifty years the kea has been a veritable Ishmael and has been treated on the principle: give a bird a bad name and shoot him. Not all that has been told of him, however, is true. Much has been the wildest conjecture; part is but colourably accurate; all, until lately, was more or less uncertain. A careful and detailed examination of the subject has been made by the author, as set forth in the book, which is well illustrated, and will appeal to the layman as well as to the scientist.

LECTURES AT THE CENTRAL MUSEUM.

Professor Charles L. Harrington will give a series of six lectures, beginning April 3rd. The series will discuss recent discoveries in Electricity and Chemistry in relation to the origin of nebulæ and planets and in explanation of the structures and life of the earth. These lectures will be illustrated by experiments and lantern photographs. The dates and subjects are as follows:

April 3, "Volcanoes and Earthquakes,"
" 10, "Life on the Planets,"
" 17, "Constitution of the Sun,"
" 24, "Pressure of Light,"
May 1, "Origin of Nebulæ,"
" 8, "Are Living Things carried from Planet to Planet?"

These lectures will begin at three o'clock and are free to the public.

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The Children's Museum.

Bedford Park.

SUGGESTIONS FOR ARBOR DAY.

It is since April 10th, 1872, when the first Arbor Day was inaugurated in Nebraska by the Hon. J. Sterling Morton, that the boys and girls of this country have had their attention called every spring to the joyousness of the season and to the opportunities of learning the wonderful secrets of Nature.

The average city boy or girl does not give sufficient thought to Nature; to the trees, the flowers and birds. How many of the children in this neighborhood take advantage of Bedford and Tompkins Parks and their vast store of natural objects?

What in Nature should interest us more than trees? The trees are our great health-givers and sanitary agents. They furnish us our homes and pure food. They keep our soil from being washed away and our rivers from flooding our towns. We meet them wherever we go and they give us pleasure at all seasons. If there were any persons whom we met so frequently and who were so kind and closely related to us, would we not know their names? Still many of us do not know the common names of the most important trees in Bedford Park. Did you ever realize that you can read the history of Bedford Park from its trees? The moisture-loving swamp white oaks, pin oaks and elms surrounding the main lawn show that there must have been a lake, in place of that lawn, with these species growing on its banks.

Have you ever observed which of the trees sends out its leaves first or which develops its buds first? How many have noticed the beautiful magnolia or the Japanese maiden-hair tree on the south side of the Museum building in Bedford Park? Did the stately swamp white oak on the east side of the building, the Osage oranges in the southeastern end and the Austrian pines in the northwestern end of the Park ever attract your attention? Did you know that Bedford Park is fortunate in having an American chestnut tree, one of the very few survivors of a great many thousands of chestnut trees that have been recently killed in Greater New York by a deadly fungus disease? Did you know that you have 278 trees of 41 kinds in Bedford Park and 382 trees of 44 species in Tompkins Park? Did you ever notice how some of the trees in Bedford Park have had their decayed cavities cleaned, treated and

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filled, just the same as you would have the cavities in your teeth attended to?

Now, I have simply mentioned these points to show you the vast field there is right here for you to study about trees; their habits and their care. Arbor Day does not stand for tree-planting alone. It stands for everything that Nature can teach us—for everything that is beautiful and good, and you will find it all reflected in trees.

Let this day, therefore, be the starting point for all of you, to learn all you can about your trees, so that, when you come to celebrate the great spring holiday again next year, you will be able to recognize the trees as your old friends who have given you happiness and taught you something new every day of the year. You will then quite agree with Byron, who said that—

"There is pleasure in the pathless woods,
There is rapture on the lonely shore,
There is society where none intrudes,
By the deep sea, and music in its roar:
I love not man the less, but nature more."

J. J. Levison, B. A., M. F.
Aboriculturist for the
Brooklyn Park Department.

Teachers and others interested in the study of trees will be glad to know that the Park Department is now at work on labels for the trees in Bedford Park.

These labels are to be placed as soon as the work of identifying the species has been finished. The Park Department has also prepared a map of the park and the walks immediately surrounding, giving the location of each tree. A key to this map consists of a list with numbers corresponding to the numbers on the map. We expect to publish this map and the key in a future issue of the News.

SPECIAL LECTURES ON TREES.

The Museum is prepared to give special lectures on trees to classes interested in the subject. Arrangements may be made at any time and charts, models, and lantern slides will be used in illustration. We would also call attention in this connection to the charts and specimens of woods for loan to schools.

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NOTES.

The Trees in Bedford Park.

"A bit of forest landscape" fittingly describes Bedford Park, for the many magnificent trees growing in its limited area of one city block are, with few exceptions, survivals of the forest which formerly covered this so well built up section of Brooklyn.

A tradition gives the elevated portion of the park as a meeting place of the Indians, and it is said that when excavating for the foundation of the Adams mansion, the present site of the Children's Museum, shells and Indian stone implements were found. Old residents also occasionally tell of the pond where they went "a-fishing" when boys, and of the delicious blackberries which grew abundantly along its borders. This pond was filled in long ago and changed into a broad, green lawn, but there still remain a number of black and white swamp oaks, which well define its former margin. These trees, as well as some red and scarlet oaks, are the largest and finest examples of native wild trees in the park. Their age, it may safely be stated, is about 200 years.

Of the many chestnut trees, which only three or four years ago gave occasion for joyful nutting parties, unfortunately only one remains today, the others having been killed by a fungus disease. A very old wild or black cherry, standing near the path facing Kingston Avenue, has proven more hardy. Its stout, gnarled trunk is virtually perforated by the boring of the larvæ of the so-called "goat moth," but in spite of these injuries, the tree blooms luxuriantly in the spring and bears a bountiful crop of fruit in the fall.

A park with so many beautiful trees naturally is a favorite recreation ground; but aside from this its chief mission, Bedford Park has become an important factor in the teaching of botany at the Children's Museum and neighboring schools, for the opportunity to study trees outdoors has proven of great advantage.

"When April winds
Grew soft, the maple burst into a flush
Of scarlet flowers. The tulip tree, high up
Opened, in airs of June, her multitude
Of golden chalices to humming birds
And silken wing'd insects of the sky."
—Bryant, "The Fountain."

One of our four-year-old visitors who has been coming to the Museum almost daily for the past three months has to ride on two lines of street cars to reach the Museum from his home. Yet every day as soon as luncheon is finished he says to his nurse: "Now I am ready to go to the Museum," and together they spend every pleasant afternoon among the exhibits.

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HOW TO TAKE CARE OF PET ALLIGATORS.

Every winter and spring the Children's Museum receives a crop of unfortunate young alligators, brought by unhappy owners who, having purchased them for household pets while in Florida, find that alligators are a serious disappointment. Instead of eating, they refuse all food, they spend nearly all of their time in sleep, and worse than either, they pine away and die. "What shall I feed him?" is the anxious query of nearly every alligator owner who comes to the Museum to find a way out of his troubles.

Now if any one of our readers is having trouble with his pet alligator it is in all probability because he keeps him in a cold place, in cold water and away from the sunlight. Like all reptiles and other cold-blooded animals, alligators become active or stupid according to the temperature of their surroundings.

The Museum now has on exhibition two healthy young alligators that have kept wide awake and taken their regular rations of earthworms and chopped beef all winter. Their home is a glass aquarium with about an inch of water in the bottom, and at one end a pile of stones upon which the alligators can go when they wish to get out of the water. The aquarium stands on a piece of "compo" board which rests on a hot-water radiator, thus keeping the water in the aquarium and the air above it at an even temperature of about 70-75 degrees. This little aquarium summer house, in a sunny window, has proven a very successful abode for its bright-eyed and lively inhabitants, and I am sure that if the boys and girls will remember to keep their alligators in warmth and sunshine, they will not only eat, but grow from year to year.

A district meeting of the Brooklyn Chapter of the City History Club of New York was held in the Museum on Saturday, March 20th, at 10:00 A. M.

Each Brooklyn Chapter sent delegates and an election of District officers was held. All City History Club members and alumni were invited to attend. The Chapters presented an interesting program, including several musical numbers, during which a new piano kindly lent to us for the occasion by the Wissner Piano Company was used. We wish to thank the Wissner Piano Company for this kindness.

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The gem collection presented to this Museum by Mr. Julius Wodiska has been permanently installed and affords a great deal of pleasure to all of our visitors. The birth-stones are of particular interest, and in reply to inquiries for a copy of the verses displayed therewith, we reproduce them below:

JANUARY.

By those in January born
No gem save GARNET should be worn;
It will insure you constancy,
True friendship and fidelity.

FEBRUARY.

The February born shall find
Sincerity and peace of mind—
Freedom from passion and from care,
If they the AMETHYST will wear.

MARCH.

Who in this world of ours their eyes
In March first open, shall be wise,
In days of peril firm and brave,
And wear the BLOODSTONE to their grave.

APRIL.

Those who in April date their years
SAPPHIRES should wear, lest bitter tears
For vain repentance flow. This stone
Emblem of innocence is known.

MAY.

Who first beholds the light of day
In spring's sweet flowery month of May.
And wears an EMERALD all her life
Shall be a loved and happy wife.

JUNE.

Who comes with summer to this earth,
And owes to June her day of birth,
With ring of AGATE on her hand,
Can health, with wealth and peace command.

JULY.

The glowing RUBY should adorn
Those who in July are born;
Thus they shall be exempt and free
From all love's doubts and jealousy.

AUGUST.

Wear a SARDONYX, or for thee
No conjugal felicity;
The August-born, without this stone,
'Tis said must live unloved and lone.

SEPTEMBER.

A maiden born when autumn's leaves
Are rustling in September's breeze
A CHRYSOLITE on her brow should bind,
'Twill cure affections of the mind.

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OCTOBER.

October's child is born for woe,
And life's vicissitudes to know;
But lay an OPAL on her breast,
And hope will lull the woes to rest.

NOVEMBER.

Who first comes to this world below
With dull November's fog and snow,
Should wear TOPAZ of amber hue,
Emblem of friends and lovers true.

DECEMBER.

If cold December gave you birth,
The month of snow and ice and mirth,
Place on your hand a TURQUOISE blue—
Success will bless whate'er you do.

Mr. James E. Parker, who with Mr. Robert Stevenson, installed an inter-communicating telephone system for the Museum last summer, has recently made several improvements in the wiring and extended the system to include additional stations.

We are very greatly indebted to Mr. Parker for preparing this time-saving and labor-saving system for us at minimum cost.

The emergence of a moth or butterfly from its pupa or cocoon always proves exciting to the young folks at the Children's Museum, who for days afterward will explain to their comrades how the shapeless creature crawled out of its narrow prison, and in less than an hour visibly grew into a beautiful insect, with large and brilliantly colored wings. To afford all visitors an opportunity to witness these fascinating transformations a large number of pupæ and cocoons have been added to the breeding cage—placed in the Insect Room.

Among the butterflies and moths of local interest the following are represented:

Tiger Swallow Tail,
Green Clouded Swallow Tail,
Cynthia Moth,
Cecropia Moth,
Polyphemus or Peacock Moth,
Luna Moth,
Imperial Moth.

Besides these, foreign countries are represented by such beautiful examples as the

European Peacock Moth, *Saturnia pyri;*
Mexican Window Moth, *Attacus orizaba;*
The Chinese Tussah Moth, *Antheræa pernyi.*
European Sphinx Moth, *Sphinx ligustri.*

To these we hope to add cocoons of the Indian Giant silk moth.

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LIBRARY NOTES.

Attention is called in this number of the MUSEUM NEWS to the "Trees in Bedford Park." All persons interested in becoming acquainted with the trees and their habits and growth, are cordially invited to consult the manuals to be found in the Children's Museum Library.

As several books upon trees have recently been added to the Library, we now have over sixty tree books. Among the many attractive books, we many mention the following:

Britton, N. L. North American Trees. 1908.
Dame, L. L. & Brooks, H. Handbook of the Trees of New England. 1901.
Emerson, A. I. & Weed, C. M. Our Trees, how to Know Them. 1908.
Hough, R. B. Handbook of Trees of Northern States and Canada. 1907.
Huntington, A. O. Studies of Trees in Winter. 1901.
Keeler, H. L. Our Native Trees, and how to Identify Them. 1900.
Lounsberry, A. Guide to the Trees. 1900.
Mathews, F. L. Familiar Trees and their Leaves. 1901.
McFarland, J. H. Getting Acquainted with the Trees. 1904.
Newhall, C. S. Trees of Northeastern America. 1900.
Peet, L. H. Trees and Shrubs of Prospect Park. 1902.
Rogers, J. E. Tree Book. 1905.
Sargent, C. S. Manual of the Trees of North America. 1905.

The Library contains numerous useful books and pamphlets in relation to the history and observance of "Arbor Day." There is a suggestive book entitled "Trees and Tree Planting" by J. S. Brisbin, and also several helpful handbooks treating upon the "Elements of Forestry."

Much serious damage is caused to forest and shade trees in Brooklyn by injurious insects. In this connection, our readers may consult various pamphlets issued by the Department of Agriculture, and also Dr. Felt's valuable volumes entitled "Insects Affecting Park and Woodland Trees," which are fully illustrated by numerous original drawings and many excellent colored plates by Mr. L. H. Joutel.

The subject of "School Gardening" is becoming more important in public schools throughout the country. As the season is at hand when attention is especially called in this direction, the Library now offers to teachers and librarians a limited number of copies of "Some Books upon Nature Study in the Children's Museum Library: An annotated list selected with special reference to School Gardening." About eighty titles are included in the List, and a second edition was printed last year to meet the unexpected demand.

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LECTURE SCHEDULE

AT THE CHILDREN'S MUSEUM.

Grades 7A and 7B: Tuesdays at 4:00 P. M.

Sound.

April 6	Production and Transmission of Sound.
April 13	The Reflection, Refraction and Interference of Sound.
April 20	Pitch and Quality of Sound.
April 27	Vibrations of Rods, Plates and Columns of Air.

Miss Lee

Grades 5A and 5B: Wednesdays at 4:00 P. M.

Plants.

April 7	Roots.
April 14	Stems.
April 21	Leaves.
April 28	Flowers.

Miss Lee

Grades 8A and 8B: Thursdays at 4:00 P. M.

Electricity.

April 1	The Preparation and Uses of the Storage Battery.
April 8	Wireless Telegraphy.
April 15	X-Rays.
April 22	How Electricity is Made and Used at Niagara Falls.
April 29	A Review of the Elementary Principals of Electricity.

Miss Lee

Grades 6A and 6B: Fridays at 4:00 P. M.

England.

April 2	London.
April 9	London (Continued).
April 16	Castles of England.
April 23	Cathedrals of England.
April 30	Lakes of England.

Miss Lee

Primary Grades: Saturdays at 10:30 A. M.

Some Signs of Returning Spring.

April 3	The Swelling of the Bud.
April 10	Spring Flowers.
April 17	Insect Life.
April 24	Bird Life.

Miss Lee

Primary Grades: Saturdays at 2:30 P. M.

The Trees of Bedford Park.

April 3	The Ancient Trees.
April 10	The Maples.
April 17	Chestnut and Horse Chestnut Trees.
April 24	Foreign Trees.

Miss Gallup

THE LECTURES ARE FREE TO THE PUBLIC.

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pecial lectures may be arranged for.—Apply to Miss Anna B. Gallup.

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THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES.

The Museum News

Central Museum, Eastern Parkway
Children's Museum, Bedford Park

VOL. 4 BROOKLYN, N. Y., MAY, 1909. No. 8

GUIDE TO THE EXHIBITS ILLUSTRATING EVOLUTION AND THE PRESERVATION OF ANIMALS.

BY FREDERIC A. LUCAS.

The exhibits shown in this room are intended to form a preface to the other collections and to suggest some of the ways in which the present animal life of the world has come into existence and the present distribution of animals brought about; also, how, after coming into being these animals have escaped being eaten up by their enemies, or destroyed by the many perils to which they are exposed. The purpose of this little guide is to give more information in regard to the facts illustrated by the specimens than can be done on a label.

On either side of the entrance are two series of maps, taken from a paper by Dr. W. D. Matthew, giving the probable shape of the continents at various epochs in their past history, and showing how the so-called solid earth is ever in motion, rising here and sinking there. These maps tell us that before the Eocene Period, Australia was cut off from all other land, and has remained isolated ever since, so that its animals have gone on developing without receiving any new life from other parts of the world. This explains the fact that the curious fauna of Australia consists almost entirely of Marsupials.

New Zealand seems never to have been joined to any body of land, so we are not surprised to learn that except four species of bats, whose powers of flight would enable them to pass over long stretches of ocean, no mammals whatever occur there.

Africa has suffered many ups and downs, now being cut up into islands, now being a huge continental island and again reaching out towards Europe and Asia, affording opportunity for the ancestors of

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our Elephants to migrate. Over the doorway, inside, is a map showing the great **Zoological Regions** of the world, as they are at present, and by the aid of the maps outside we can see how in the past it was possible for animals to pass from one part of the world to another, thus influencing the life of the regions entered, and leaving their impress on the present animal life. The Mammoth, for example, journeyed from England to New York, two-thirds of the way around the world, making a journey that lasted thousands of years, and crossing places like the English Channel and Bering Straits that now form impassable barriers to land animals. Thus the present distribution of animal life is due partly to evolution within fixed boundaries, and partly to changes brought about by migration from other parts of the world.

Directly opposite the doorway is an exhibit illustrating **Obliterative Shading,** a term applied by Mr. Abbott H. Thayer, the well-known artist, to those variations in color which counteract, or obliterate, the lights and shadows that would otherwise render a protectively colored animal plainly visible. This fact, and its importance in Nature, was discovered and demonstrated by Mr. Thayer. Obliterative Shading, broadly speaking, is a darkening of the upper parts of the body, which are in strong light, and lightening of the under parts which are in shadow.

The models represent a flock of birds some of which are "obliteratively shaded," while others are not, and it is easy to see that the bird that is exactly like the background in pattern, but is not shaded, can be readily seen, much more easily even than the perfectly plain bird that is shaded. To escape detection, a bird or other animal must not only resemble its surroundings in color, but be so shaded that the natural lights and shadows are counteracted. Obliterative shading is, so to speak, a refinement of protective coloration, the final touch that makes it effective to the last degree.

But it is to be remembered that for the most part the enemies of birds hunt them from above and that from this point of view their intended victims would be protected without any shading and, furthermore, that their four-footed foes hunt by scent as well as by sight.

Directly related to obliterative shading are the questions of **Protective Coloration, Protective Resemblance and Mimicry.** These are particularly well shown among insects, although examples are to be found among all classes of animals. Protective Coloration is the resemblance in color and markings which an animal bears to its surroundings, such as the suggestion of dead grass in the markings of the snipe and meadow lark, and the resemblance between the markings on the upper

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wings of some moths and the bark or dead wood on which they rest. Protective Resemblance is the likeness of an insect, for example, to some particular object, such as the similarity of some caterpillars to dead twigs and of some butterflies to dry leaves. Mimicry goes a step beyond this and is the resemblance of one animal to another in form, color and habits. It is especially well shown among insects and is usually between harmless, palatable species and those unpleasant to the smell or taste, provided with a sting, or having some similar means of defense. It is generally assumed that mimicry has been brought about by natural selection, acting during a long period of time and is one of the means by which weak or defenseless species have been preserved in the struggle for existence. The close resemblance of two otherwise widely separated species is much more apparent in living insects under natural conditions than between lifeless specimens.

The real value of these matters is still in dispute. It is claimed on one side that they are brought about in response to definite laws, and that even the most gaudy colors of birds and butterflies are protective when these animals are seen among their natural surroundings. On the other side, it is asserted that these protective resemblances are largely or entirely accidental and that they serve little use in protecting animals. Somewhere between these two extremes lies the truth. It is hard to believe that animals like the Tree Frogs are not really protectively colored. These little frogs usually resemble in general color the objects on which they are found and the specimens shown illustrate this very well. While experiments on the European Tree Frog show that its change of color may be brought about by the character of the surface on which it rests, being green on smooth objects and gray on those which are rough, this is quite in accord with what we should expect, since leaves are smooth and stone and bark rough. Therefore, animals on the smooth leaves would assume the green color, while those upon the rough bark or stone would be gray or brown.

On the left is an exhibit treating Man from a zoölogical standpoint as a species of the Order Primates, calling attention to some of the points wherein man agrees with or differs from the other members of the order.

Also on the left, or West side, is a case containing illustrations of some of the stages, such as Individual and **Geographic Variation** which are believed to lead to the development of new species. Individual variation is the starting point of evolution; if there was no variation there would be no new species, but the series of Ruffs and Moths shows how much variation there may be in a given species. Ordinarily individual variation is kept down by a mixing of individuals or by change of locality so that the tendency to vary is checked and a general average preserved. But when animals through force of geographical, or other conditions, are kept more or less in one place the individuals that tend to vary are kept together, or all the animals of a given locality are subjected to the same

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conditions of climate and food supply. This leads to the production of local races or **Subspecies,** the individuals of any given species from one locality resembling one another and differing slightly in form, color, or size, from examples of the same species found elsewhere though connected with, or blending into them by animals intermediate in character. There is thus no hard and fast line between them. If, however, the intermediate forms are removed, there are no connecting links between the local races and they rise to the dignity of species. The Great Horned Owls offer fine examples of subspecies, as the differences between some of the races are so marked as to be recognized by any one, and yet between the various subspecies may be found intermediate forms through which one local race passes gradually into another. The explanation of why so many subspecies are to be found among the Great Horned Owls is that the species occurs over a remarkably large extent of territory, while the range of migration is small. These owls are able to obtain their food in very nearly the same locality the year around and are not forced to change their habitat with the season. Hence year after year, century after century the occupants of a given region have all been subjected to the same conditions and have changed alike, until a dozen or more distinct local races or subspecies have come into existence connected by intermediate forms. Thus as we pass from place to place one kind of owl is gradually replaced by another without its being possible to tell just where one begins and another ends. Take away these connecting forms and the birds left would be so many distinct species. These changes are believed to be brought about through a natural tendency of animals to vary, influenced or directed by their surroundings or environment, **Environment** being the term used to denote the general conditions under which any animal lives. In the case of land animals this includes climate, elevation, and the nature of the surrounding country, with its plants and animals. With aquatic animals depth, distance from land, and temperature are important factors. Those who prefer to do so may say that animals are *adapted* to their environment; in any case the results are the same.

Cave Dwelling Animals are excellent examples of influence of or adaptation to environment, and illustrate the effects of darkness and quiet, the extent of their modifications depending upon the length of time that the species to which they belong have been cave dwellers. They may be divided roughly into three groups, corresponding to as many stages in the probable evolution of the most highly modified species.

The first of these includes animals that prefer dark or shady places and for the most part dwell outside of caves, but are also found just inside the entrance of caves. In these animals the eyes are present and useful.

To the second group belong animals occasionally found in the open, but living mostly within caves, reaching depths where total darkness prevails. In such animals the eyes are small in size and largely useless.

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Animals of the third class are confined to the depths of caves where light does not penetrate and where eyes would be useless. In these the eyes are minute, concealed beneath the skin or entirely absent. To compensate for the loss of sight, the sense of touch is developed to a high degree.

All such matters as protective coloration and the various means of defense and offense by which animals escape their enemies or are enabled to procure food have to do with what is termed the **Struggle for Existence or Survival of the Fittest.**

It must be remembered that the so-called struggle for existence is what we might call a passive struggle and that the animals engaged in it are not at all conscious of the combat that is going on. Survival of the fittest is perhaps a better term, as it notes the survival of those animals best fitted to endure the conditions under which they live and the dangers to which they are continually exposed, such as drought, floods, cold, enemies, lack of food. In this silent but none the less sanguinary struggle for existence a few survive through mere size and strength, many through sheer force of numbers, the ability to fill up the ranks swept by an appalling death rate; but the great majority exist through an acquired ability to elude their many enemies and tide over the accidents of drought and flood and cold.

The Cod is an excellent illustration example of survival through mere force of numbers; it is so prolific, depositing from 2,000,000 to 9,000,000 eggs according to the size of the fish, that it is still abundant in spite of many enemies and centuries of active pursuit of fishermen. Other species like the Porcupine fish are preserved by an armor of spines or bony plates that renders them uneatable. Similar armor-clad animals are to be found in the manis and armadillo among mammals.

The familiar skunk is a fine example of a creature that has found protection in an effective if very disagreeable way, and any one who has seen the animal sauntering insolently along the road can easily believe that he fully realizes how well he is protected.

Finally, as a piece of corroborative evidence, we have **Variation under Domestication,** as shown by the Domesticated Fowl. We know that all the breeds of fowls, widely as they differ in size, form, coloration, and even in their skeletons, have been produced by man taking advantage of natural variations; that certainly the majority and possibly all are descended from the Jungle Fowl of India.

If such great changes have been brought about in a comparatively short time by artificial selection, there is no reason to doubt that similar changes have been wrought by natural selection during past geologic ages, nor that they are still taking place.

The specimens shown afford a mere hint, a few suggestions only, of the probable ways in which species have been produced and of the various adaptations by which they have been preserved.

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BOOKS AND ARTICLES.

Many books and articles have been written on the subjects illustrated, and for the benefit of those who wish fuller information a list of some of the more important or more readable books and articles is appended. Most of these may be found in the Museum Library.

Brooks, W. K.,
Foundations of Zoölogy. 1899.

Bailey, L. H.,
Survival of the Unlike: evolution essays suggested by study of domestic plants. 1899.

Beddard, F. E.,
Animal Coloration. 1895.

Clodd, Edward,
Primer of Evolution. 1895.

Darwin, C. R.,
Descent of Man, and Selection in Relation to Sex. 1872-'73.
Origin of Species. 1859.

Drummond, Henry,
Lowell Lectures on Ascent of Man. 1894.

Flower, W. H.,
The Horse: a study in natural history. 1892.

Huxley, T. H.,
Man's Place in Nature, and other anthropological essays. 1863-'90.

Jordan, D. S. & Kellogg, V. L.,
Evolution and Animal Life. 1907.

Metcalf, M. M.,
Outline of Theory of Organic Evolution. 1904.

Morgan, T. H.,
Evolution and Adaptation. 1903.

Morris, C.,
Man and his Ancestor. 1900.

Nutting, C. C.,
Color of Deep-sea Animals. (Extracted from Iowa Academy of Sciences. Proceedings.)

Poulton, E. B.,
Colours of Animals; their meaning and use, especially considered in the case of insects. 1890.
Essays on Evolution. 1908.

Romanes, G. J.,
Darwin and after Darwin. 1901.

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Saleeby, C. W.,
Organic Evolution.
Evolution the Master Key. 1906.

Shute, D. K.,
First Book of Organic Evolution. 1899.

Thayer, A. H.,
The Law which underlies Protective Coloration. (Smithsonian Institution. Annual Report, 1897, pp. 477-482.)

Thayer, G. H.,
Concealing Coloration of Animals: new light on an old subject. (Century Magazine, June, 1908, pp. 249-261.)

Vernon, H. M.,
Variation in Animals and Plants. 1902.

Wallace, A. R.,
Darwinism: an exposition of the theory of natural selection, with some of its applications. 1901.
Natural Selection and Tropical Nature. 1895.

Two volumes fresh from the press are "Fifty Years of Darwinism" and "Darwin and Modern Science," both products of the Darwin centenary celebrated this year. The former consists of eleven addresses delivered on the occasion of the Darwin centenary in this country, and the latter a memorial volume embodying the European addresses.

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MUSEUMS OF

The Brooklyn Institute of Arts and Sciences

CENTRAL MUSEUM,
Eastern Parkway and Washington Ave.

Open from 9 A. M. to 6. P. M., Monday to Saturday (inclusive). Thursday evening, from 7.30 to 9.45. Sunday afternoon, from 2 to 6.

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HOW TO REACH THE MUSEUM.

From New York: Subway Express to Atlantic Ave., thence by St. John's Place car to Sterling Place.

From Brooklyn Bridge: Flatbush Avenue car to Prospect Park, thence down Eastern Parkway to Museum Building.

CHILDREN'S MUSEUM
185 Brooklyn Avenue, Bedford Park.

Open free to the public from Monday until Saturday (inclusive), from 9 A. M. to 5.30 P. M., and on Sunday from 2 until 5.30 P. M.

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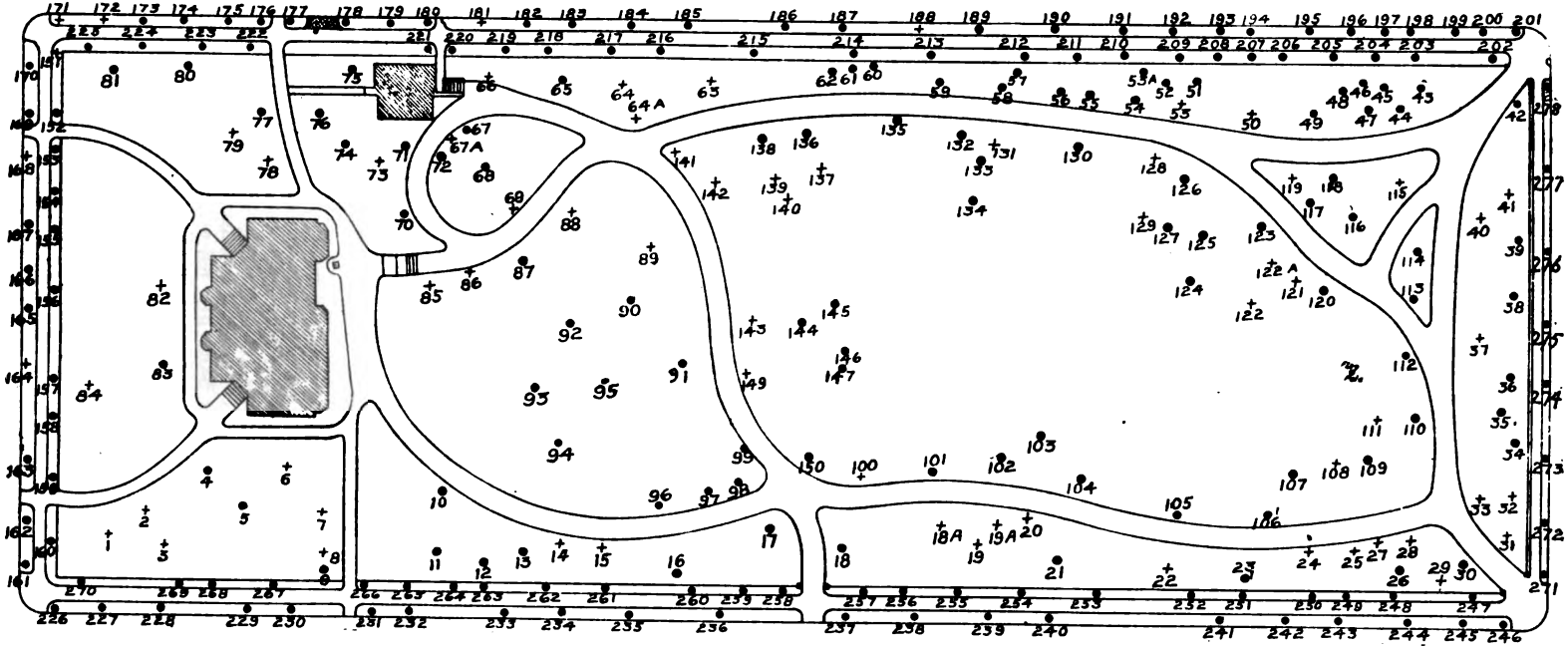

MAP OF BEDFORD PARK

SHOWING THE LOCATION OF THE

TREES AND IMPORTANT SHRUBS

Prepared by the Department of Parks
Borough of Brooklyn

+ Indicates that the tree is labeled

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The Children's Museum.

Bedford Park.

GUIDE

TO THE

Trees and Important Shrubs of Bedford Park.

By J. J. Levison, B. A., M. F.

Arboriculturist, Brooklyn Park Department.

LIST OF SPECIES FOUND IN BEDFORD PARK.

Arbor vitæ
Buckeye
Cedar, white,
Cercidiphyllum
Cherry, Black
Chestnut
Cucumber tree
Cypress
Dogwood, Flowering
" Red-Osier
Elm, American
" Camperdown
" Cork
" English
" Scotch
" Slippery
Fringe tree
Ginkgo
Gum, Sweet
Hawthorn, English
Hazelnut
Hercules club
Horse-chestnut
Juniper, Low
Larch, European
Linden, American
Mahonia
Maple, Norway
" Red
" Silver
" Sugar
" Sycamore
Oak, Black
" English
" Pin
" Swamp-white
" White
" Willow
Orange, Osage
Pine, Austrian
Plum
Rhododendron
Sophora
Spruce, Blue
" Norway
" Red
Tulip
Yew, European

NOTE.—Numbers marked with + on the map indicate trees that are labeled. This list was prepared last month in order to assist those who wish to use it during the summer. The identifications were, therefore, of necessity, based upon winter characters only, and as these were, in two or three cases, not quite as positive a means of identification as the leaves and fruit, it may be that the list will stand a slight revision by the end of the summer.

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TREES AND IMPORTANT SHRUBS OF BEDFORD PARK.

No.	Common Name	Latin Name
1	Ginkgo or maidenhair tree	*Ginkgo biloba*
2	Cucumber tree	*Magnolia acuminata*
3	American linden	*Tilia americana*
4	Camperdown elm	*Ulmus scabra*, var. *pendula*
5, 6	Horse-chestnut	*Æsculus hippocastanum*
7	English elm	*Ulmus campestris*
8, 9	English hawthorn	*Cratægus oxyacantha*
10-12	Norway maple	*Acer platanoides*
13	Tulip tree	*Liriodendron tulipifera*
14	White cedar	*Chamæcyparis pisifera*
15	Fringe tree	*Chionanthus virginica*
16	Norway maple	*Acer platanoides*
17	Flowering dogwood	*Cornus florida*
18	English elm	*Ulmus campestris*
18a	Red-osier dogwood	*Cornus stolonifera*
19	Tulip tree	*Liriodendron tulipifera*
19a	Mahonia	*Mahonia japonica*
20	Arbor vitæ	*Thuja occidentalis*
21	Norway maple	*Acer platanoides*
22	Low juniper	*Juniperus communis*
23	Norway maple	*Acer platanoides*
24	Flowering dogwood	*Cornus florida*
25	Willow oak	*Quercus phellos*
26	Norway maple	*Acer platanoides*
27	Cercidiphyllum	*Cercidiphyllum japonicum*
28	White cedar	*Chamæcyparis pisifera*
29	Sweet buckeye	*Æsculus octandra*
30	Norway maple	*Acer platanoides*
31	Cercidiphyllum	*Cercidiphyllum japonicum*
32	Japanese sophora	*Sophora japonica*
33	Bald cypress	*Taxodium distichum*
34, 35	Norway maple	*Acer platanoides*
36	Austrian pine	*Pinus austriaca*
37	Osage orange	*Toxylon pomiferum*
38-40	Pin oak	*Quercus palustris*
41	White oak	*Quercus alba*
42	Flowering dogwood	*Cornus florida*
43	Pin oak	*Quercus palustris*
44	Norway maple	*Acer platanoides*

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No.	Common Name	Latin Name
45	Removed	
46, 47	Flowering dogwood	*Cornus florida*
48	Black oak	*Quercus velutina*
49	Pin oak	*Quercus palustris*
50	Norway maple	*Acer platanoides*
51	Horse-chestnut	*Æsculus hippocastanum*
52, 53, 53a	White cedar	*Chamæcyparis pisifera*
54-56	Norway maple	*Acer platanoides*
57	A form of White oak	*Quercus (macrocarpa?)*
58-62	Norway maple	*Acer platanoides*
63	English oak	*Quercus pendunculata* (or *Q. sessiliflora*)
64	American chestnut	*Castanea dentata*
64a	White cedar	*Chamæcyparis pisifera*
65	White oak	*Quercus alba*
66	Black oak	*Quercus velutina*
67	White oak	*Quercus alba*
67a	Rhododendron	*Rhododendron catawbiense*
68	Pin oak	*Quercus palustris*
69	White oak	*Quercus alba*
70	Pin oak	*Quercus palustris*
71, 72	Flowering dogwood	*Cornus florida*
73	Sweet gum	*Liquidambar styraciflua*
74	Pin oak	*Quercus palustris*
75	Scotch elm	*Ulmus scabra*
76	Norway maple	*Acer platanoides*
77	American elm	*Ulmus americana*
78	European larch	*Larix europea*
79, 80	Norway spruce	*Picea excelsa*
81	Horse-chestnut	*Æsculus hippocastanum*
82, 83	Camperdown elm	*Ulmus scabra*, var. *pendula*
84	Ohio buckeye	*Æsculus glabra*
85	Swamp white oak	*Quercus platanoides*
86	Sycamore maple	*Acer pseudo-platanus*
87	Black oak	*Quercus velutina*
88	Flowering dogwood	*Cornus florida*
89	Red maple	*Acer rubrum*
90	Removed	
91	Swamp white oak	*Quercus platanoides*
92	Norway maple	*Acer platanoides*
93	Scotch elm	*Ulmus scabra*
94	Pin oak	*Quercus palustris*

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No.	Common Name	Latin Name
95	Removed	
96	English elm	*Ulmus campestris*
97	White cedar	*Chamæcyparis pisifera*
98	Norway maple	*Acer platanoides*
99	Flowering dogwood	*Cornus florida*
100-107	Norway maple	*Acer platanoides*
108, 109	Osage orange	*Toxylon pomiferum*
110	Horse-chestnut	*Æsculus hippocastanum*
111	Hercules club	*Aralia spinosa*
112	Norway maple	*Acer platanoides*
113	Pin oak	*Quercus palustris*
114	Flowering dogwood	*Cornus florida*
115	Black oak	*Quercus velutina*
116-120	Pin oak	*Quercus palustris*
121	Black cherry	*Prunus serotina*
122	Hazelnut	*Corylus pontica*
122a	European yew	*Taxus baccata*
123	Norway spruce	*Picea excelsa*
124	Austrian pine	*Pinus austriaca*
125	Blue spruce	*Picea parryana*
126	Norway maple	*Acer platanoides*
127	Flowering dogwood	*Cornus florida*
128	White cedar	*Chamæcyparis pisifera*
129	Austrian pine	*Pinus austriaca*
130	Norway maple	*Acer platanoides*
131-133	Ginkgo or maidenhair tree	*Ginkgo biloba*
134	Red maple	*Acer rubrum*
135	Norway maple	*Acer platanoides*
136	Norway spruce	*Picea excelsa*
137	Oriental spruce	*Picea orientalis*
138	Norway maple	*Acer platanoides*
139	Norway spruce	*Picea excelsa*
140	Blue spruce	*Picea parryana*
141	Norway maple	*Acer platanoides*
142	Plum	*Prunus*
143	Scotch elm	*Ulmus scabra*
144-148	Norway maple	*Acer platanoides*
149	Cork elm	*Ulmus Thomasi*
150	Norway maple	*Acer platanoides*
151	Scotch elm	*Ulmus scabra* (variety)
152	Removed	

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No.	Common Name	Latin Name
153-156	Scotch elm	*Ulmus scabra* (variety)
157-162	Norway maple	*Acer platanoides*
163	Sycamore maple	*Acer pseudo-platanus*
164	Sugar maple	*Acer saccharum*
165-170	Norway maple	*Acer platanoides*
171	Sycamore maple	*Acer pseudo-platanus*
172	Silver maple	*Acer saccharinum*
173	Norway maple	*Acer platanoides*
174	Silver maple	*Acer saccharinum*
175	Sycamore maple	*Acer pseudo-platanus*
176	Silver maple	*Acer saccharinum*
177	Sycamore maple	*Acer pseudo-platanus*
178-180	Norway maple	*Acer platanoides*
181	Sycamore maple	*Acer pseudo-platanus*
182	Silver maple	*Acer saccharinum*
183	Norway maple	*Acer platanoides*
184	Silver maple	*Acer saccharinum*
185	Sycamore maple	*Acer pseudo-platanus*
186	Norway maple	*Acer platanoides*
187	Removed	
188	Sugar maple	*Acer saccharum*
189	Silver maple	*Acer saccharinum*
190	Sycamore maple	*Acer pseudo-platanus*
191	Sugar maple	*Acer saccharum*
192	No tree	
193-198	Silver maple	*Acer saccharinum*
199-201	Sycamore maple	*Acer pseudo-platanus*
202-204	Scotch elm	*Ulmus scabra* (variety)
205	English elm	*Ulmus campestris*
206	Scotch elm	*Ulmus scabra* (variety)
207	Slippery elm	*Ulmus fulva*
208	Scotch elm	*Ulmus scabra* (variety)
209	Removed	
210	Norway maple	*Acer platanoides*
211-213	Scotch elm	*Ulmus scabra* (variety)
214-216	English elm	*Ulmus campestris*
217	Removed	
218	Removed	
219, 220	English elm	*Ulmus campestris*
221	Scotch elm	*Ulmus scabra* (variety)
222	English elm	*Ulmus campestris*
223, 224	Norway maple	*Acer platanoides*

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No.	Common Name	Latin Name
225	English elm	*Ulmus campestris*
226, 227	Norway maple	*Acer platanoides*
228	Sycamore maple	*Acer pseudo-platanus*
229, 230	Norway maple	*Acer platanoides*
231	Sugar maple	*Acer saccharum*
232	Sycamore maple	*Acer pseudo-platanus*
233, 234	Norway maple	*Acer platanoides*
235	Sycamore maple	*Acer pseudo-platanus*
236	Norway maple	*Acer platanoides*
237	Sycamore maple	*Acer pseudo-platanus*
238	Norway maple	*Acer platanoides*
239	Sycamore maple	*Acer pseudo-platanus*
240	Sugar maple	*Acer saccharum*
241	Sycamore maple	*Acer pseudo-platanus*
242-246	Norway maple	*Acer platanoides*
247-252	Scotch elm	*Ulmus scabra* (variety)
253	English elm	*Ulmus campestris*
254-257	Scotch elm	*Ulmus scabra* (variety)
258, 259	English elm	*Ulmus campestris*
260-262	Scotch elm	*Ulmus scabra* (variety)
263	Removed	
264, 265	Norway maple	*Acer platanoides*
266-268	English elm	*Ulmus campestris*
269	Norway maple	*Acer platanoides*
270	English elm	*Ulmus campestris*
271	Norway maple	*Acer platanoides*
272-274	Sycamore maple	*Acer pseudo-platanus*
275-277	Norway maple	*Acer platanoides*
278	Sycamore maple	*Acer pseudo-platanus*

Bedford Park, with its forty-four species of labeled trees, in connection with the Children's Museum, where detailed information in regard to any one of the species may readily be obtained, offers exceptional advantages to beginners in the study. The foregoing list with the map is for free distribution at the Museum and will be found of practical use in identifying trees in the Park. The Park Department has, within the past few weeks, put all of these trees in excellent condition. The eggs and cocoons of injurious insects have been removed from the bark, dead and dying limbs have been pruned, diseased and decayed wood has been cut away, the cavities sterilized and filled with cement and all places where wood was exposed have received a coat of coal-tar for protection against attacks of fungus and insects.

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LIBRARY NOTES.

As the season advances, and the trees put forth their foliage of living green, a fresh interest is naturally awakened in this interesting field of study.

The Children's Museum Library provides a convenient opportunity for acquaintance with all Nature subjects, and its resources are always at the service of any person who desires to consult them.

A few titles of some of the most attractive books upon "Trees" were given in the April number of the MUSEUM NEWS, but a large number of other desirable manuals are accessibly placed upon open shelves, convenient for reference.

Among the picture bulletins appropriate to the season, which have been placed upon the walls of the Library are "The Blossoming of the Trees" and "Arbor Day." The former calls attention, through its half-tone photographs, to the flowers of the magnolia, flowering dogwood, Carolina poplar, the American elm and other trees in this vicinity, and the latter to the cultivation and care of trees.

Some other timely bulletins have suggested the "Birds and Flowers of Spring" by attractive colored prints. Through the courtesy of the publishers of "Suburban Life," a beautifully colored picture of the cultivated Iris is shown in contrast to its humbler cousin, *Iris versicolor*.

A brief list of useful books for the study of birds, insects, flowers, and trees was prepared for a "Mothers' Club" last year, which the Club reported gave pleasure and profit. A portion of the list is given below:

Hodge, Nature Study.
Holtz, Nature Study.
Mathews, Familiar Life in Field and Forest.
Allen, Mother Nature's Children. (For children's reading.)
Blanchan, Bird Neighbors.
Chapman, Bird Life.
Blanchan, Birds that Every Child Should Know. (For children.)
Comstock, Insect Life.
Morley, Insect Folk. (For children's reading.)
Dana, How to Know the Wild Flowers.
Mathews, Field Book of American Wild Flowers.
Dunham, Fifty Flower Friends with Familiar Faces. (For children.)
Emerson & Weed, Our Trees, How to Know Them.
Keeler, Our Native Trees.
Stokes, Ten Common Trees. (For children's reading.)

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LECTURE SCHEDULE
AT THE CHILDREN'S MUSEUM.

Grades 7A and 7B: Tuesdays at 4:00 P. M.

Geography of Eastern Countries.

May 4	Turkey.	
May 11	Persia.	
May 18	Syria.	
May 25	India.	**Miss Lee**

Grades 5A and 5B: Wednesdays at 4:00 P. M.

Wonders of Nature.

May 5	Rivers and Underground Waters.	
May 12	Falls and Rapids.	
May 19	Gorges and Cañons.	
May 26	Glaciers.	**Miss Lee**

Grades 8A and 8B: Thursdays at 4:00 P. M.

Light.

May 6	The Production and Velocity of Light.	
May 13	Reflection, Refraction and Interference of Light.	
May 20	Lenses.	
May 27	Optical Instruments.	**Miss Lee**

Grades 6A and 6B: Fridays at 4:00 P. M.

Germany.

May 7	Along the River Rhine.	
May 14	Berlin.	
May 21	Dresden and other Cities.	
May 28	Peasant Life.	**Miss Lee**

Primary Grades: Saturdays at 10:30 A. M.

Insects.

May 1	Moths and Butterflies.	
May 8	Bees.	
May 15	Grasshoppers.	
May 22	Beetles.	**Miss Lee**

Primary Grades: Saturdays at 2:30 P. M.

Wild Flowers.

May 1	The Buttercup.	
May 8	The Violet.	
May 15	Butter-and-Eggs.	
May 22	The Primrose.	**Miss Gallup**

THE LECTURES ARE FREE TO THE PUBLIC.

Special lectures may be arranged for.—Apply to Miss Anna B. Gallup.

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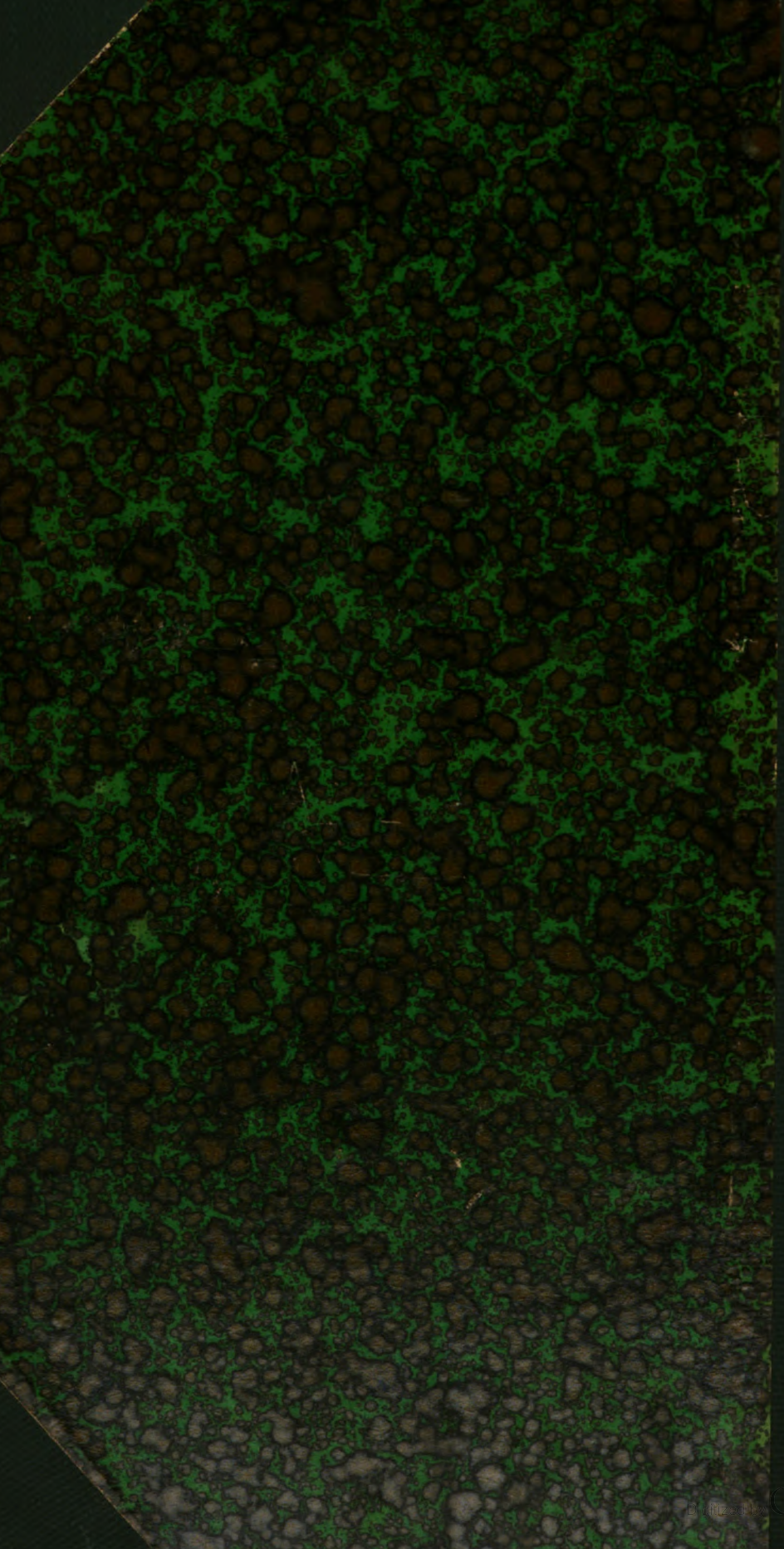
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